Program Review Report

Yuba Community College District

YC - Biology & Ecology Program Recommendations

Program Description: Program Courses

The Biology program at the Marysville campus offers courses that meet 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, 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). 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 as face to face. Ecology 12 and Biology 11, 24 and 25 are only taught online. Biology 10 is taught online and face to face. 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.

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.

The Clear lake campus offers a short selection of general education courses for non-majors (Biology 15, Ecology 10, 11) and prerequisite classes for students entering programs in the health care industry (Biology 5, 6 and 15).

Year of Review: 2012-2013

Type of Review: Self-Study (4-year review)

Executive Summary: Program Overview

The current status of the program for 2010 - 11:
WSCH/FTEF equals 596.96 at 9.83 FTEF
Retention for the department was 81.8%
61.6% earned a passing grade
Significant changes in the program since the last program review or annual update.

Future Goals and Program Direction: The Goals for the department are listed below:

1. The program faculty will establish an Associates degree in Biology and assess articulation agreements with other colleges and universities

The program AS degree was approved by the curriculum committee and is now being reviewed by the State Chancellors office. We await final approval.

2. The deparment faculty will look for ways to improve success and retention rates

Both success and retention have peaked in the program and we are looking at new ways to improve success. We are continuing to look at reducing very large class size (100+) students to large class size of 60 - 72 students. Other means to improve success include adding prerequisite courses, tutoring, and open labs. In the classroom we experimenting

with case studies, group projects and group work and other assignments to ensure students are working to learn the material for examination. Retention is a 80% and we are fairly satisfied with that report. The program success rate has been steady with an average of 62%. Many of the recommendations in this program review focus on imporving student success while maintaining course standards.
3. The department will seek to maintain and/or improve staffing for the department. We still seek to replace one fulltime position as a result of retirement. We seek to hire an additional Instructional Assistant to the laboratory prep. We need more budgeted hours of student help to support labortory grading and preparation.
4. The program faculty and staff will assess the facilities to improve safety and learning environments.
5. 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.
6. Maintain and Update Program Curriculum to ensure SLO acheivement, transfer to other higher eductional institutions or programs
7. Faculty seek to improve curriculum design and teaching methodology through professional development, peer discussion, and classroom experimentation.
The significant changes expected during the upcoming year.
The department is continuing to evaluate extra-large lectures in an effort to improve success and retention.
The department expects the college to hire and replace one biology faculty member.
Current teaching assignments will be evaluated and restructured as new faculty members are hired for the department.
The program will consider adding prequisite courses to the current offerings as a means to improve success.

The department is offering Biology 10, 24 and Ecol 10 at the Sutter facility. The Executive Dean for the Sutter center has contacted the department about the logistics for teaching lab courses at the facility.

Course Content and Statistical Analysis: The department does not have course with english, reading or math as a prerequiste. Biology 15 and Reading 15 were courses tied to each other in an effort to help students with reading a science textbook. Once the Reading instructor retired the class was no longer offered.

Curriculum & SLO Assessment Summary : At Yuba College Marysville campus Biology Department, we have designed SLOs for most all courses. A schedule for the assessment of the SLOs in each course has been formulated and has been adhered to for 4 years now. The schedule assures that each course has its SLOs assessed and the results recorded at least once in a 4 year cycle. Most course SLOs have been assessed more than once during the 4 year cycle. If the SLO assessment yielded results that indicated a need, an action plan was derived and the modification implemented.
At Clear Lake, SLOs are now assessed in every course every semester. The results are forwarded either directly to District infrastructure or channeled with data from other sections of the courses in Marysville. For two semesters, experimental changes have been made in instruction pursuent to SLO results.
In regards to curriculum, all Biology courses have had, or are having their Course Outline of Record updated. During this process all courses are being updated to current status regarding textbooks, course curriculum, instructional technology use, lab manual version updating, course objectives, course outlines, and student learning outcomes.
Curriculum offerings are being maintained as well as possible despite budget deficit influences (ie: the diversity of the Biology program curricula has been retained with reductions in section offerings rather than the elimination of critical program courses).

Recommendations	Plans of Action & Budgetary Impact / Tasks	Status	Feedback & Follow-Up
YC - Biology & Ecology Program Recommendations - 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. **Budgetary Impact:** None at this time. Impact on College Research and Faculty schedules to collect and analyze the data		
YC - Biology & Ecology Program Recommendations - Evaluate Extra Large Classes to imporve 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. 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 too 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. **Year(s) Requested:** 2010-2011	**Plan of Action:** The faculty will work with the college researcher to determine a method to evaluate large classes. **Budgetary Impact:** None at this time. Impact on College Research and Faculty schedules to collect and analyze the data		

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Recommendation Priority: 3. High Priority **Supporting Evidence (SLO, WSCH, etc.):** 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.			
YC - Biology & Ecology Program Recommendations - 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 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	**Plan of Action:** Complete and submit request to fill faculty vacancy		
	Plan of Action: The Division Dean and program faculty will develop job requests to hire an addtional IA for Marysvilll and a new IA for Clear Lake		
	Plan of Action: Submit a request to the VP of Yuba College to increase Student Support in Biology.		

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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. At the Clear Lake campus facilities now exist for teaching Anatomy (Biology 4). We currently seek an adjunct professor for teaching this course to round out our			

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offerings for preparing students for further training in health fields. 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. There is no laboratory assistance at the Clear Lake campus. As the campus moves			

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toward emphasizing the Anatomy and Physiology offerings, an IA will be needed to maintain and upkeep the facilities, equipment and other matters related to laboratory instruction. **Year(s) Requested:** 2010-2011 2011-2012 2012-2013 **Recommendation Priority:** 3. High Priority			
YC - Biology & Ecology Program Recommendations - 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. **Year(s) Requested:** 2012-2013 **Request Date:** 09/24/2012 **Recommendation Priority:** 3. High Priority **Supporting Evidence (SLO, WSCH, etc.):** 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	**Plan of Action:** 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. **Type:** Equipment/Technology **Budgetary Impact:** Unknown. Expect it to vary year by year but could add several thousand dollars to the budget annually. **Location:** Yuba College - All **DE Related:** Yes		

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as extreme importance to maintain current curricula.			
YC - Biology & Ecology Program Recommendations - 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. **Year(s) Requested:** 2012-2013 **Request Date:** 09/24/2012 **Recommendation Priority:** 2. Medium Priority **Supporting Evidence (SLO, WSCH, etc.):** 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.	**Plan of Action:** 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. **Type:** Equipment/Technology **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. **Location:** Yuba College - All **DE Related:** Yes		
YC - Biology & Ecology Program Recommendations - 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	**Plan of Action:** 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. **Type:** Equipment/Technology		

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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. **Year(s) Requested:** 2012-2013 **Request Date:** 09/24/2012 **Recommendation Priority:** 2. Medium Priority **Supporting Evidence (SLO, WSCH, etc.):** 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.	**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. **Location:** Yuba College - All **DE Related:** Yes		
YC - Biology & Ecology Program Recommendations - 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. **Year(s) Requested:** 2012-2013 **Request Date:** 09/24/2012 **Recommendation Priority:**	**Plan of Action:** Develop 1-2 advancements that can be made in each Biology/Ecology course if additional equipment were available. **Type:** Equipment/Technology **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. **Location:** Yuba College - All **DE Related:** Yes		

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3. High Priority **Supporting Evidence (SLO, WSCH, etc.):** 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.			
YC - Biology & Ecology Program Recommendations - 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 (SLO, WSCH, etc.):** 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		
	Plan of Action: Program faculty will review and collect data to determine student should have chemistry as a prerequisite to biology courses.		
	Plan of Action: Program faculty will review and collect data to determine if any math, english or reading course should be considered as prerequisite to biology courses		
	Plan of Action: Program faculty will compare of the success and retention of students taking MCOMM 40 vs. those that do not. **Budgetary Impact:** None at this time. Faculty time and College Researcher time will be impacted.		
YC - Biology & Ecology Program Recommendations - How to Learn Science Modules - Program faculty will develop a set of modules that any biology faculty can	**Plan of Action:** Biology Department faculty will meet to discuss a plan to design these potential modules, workshops, seminars.		

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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	**Budgetary Impact:** Possibly flex credit for department faculty.		
	Plan of Action: Biology department will develop eLearning instructional modules designed to improve reading skills/note-taking/test-taking strategies. **Budgetary Impact:** None - potential flex **Location:** YC Marysville Campus **DE Related:** Yes		
YC - Biology & Ecology Program Recommendations - 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		
	Plan of Action: Program faculty will develop a plan to coordinate and improve communication and services between the program and Writing Center		
	Plan of Action: Program faculty will develop a plan to coordinate and improve communication and services between the program and Student Success Center		
YC - Biology & Ecology Program Recommendations - 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	**Plan of Action:** Department faculty will meet to discuss the potential development, design, and implementation of these courses.		

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a method to improve success and retention. **Recommendation Priority:** 2. Medium Priority			
YC - Biology & Ecology Program Recommendations - Course Outlines - 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:** 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. **Type:** Curriculum/SLO **Budgetary Impact:** No budgetary impact.		
YC - Biology & Ecology Program Recommendations - Student Learning Outcomes - Review completed SLOs to modify, add or delete SLOs as needed. Update SLO schedule. Complete any SLOs not developed or measured. 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.	**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		

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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. **Recommendation Priority:** 2. Medium Priority	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... **Budgetary Impact:** No budgetary impact.		
YC - Biology & Ecology Program Recommendations - Department Faculty will establish and offer an AS Degree in Biology - Since many students transfer to the CSUC and UC systems directly into Biology programs, we have designed and proposed a two year AS Degree in Biology. The request to add an AS in Biology was approved by the Curriculum Committee on February 1, 2011. The paperwork to acquire state approval was submitted to the Chancellor's office in January 2012. We are currently awaiting final approval. The A.S. degree in Biology is designed to prepare students for transfer to four-year institutions for pre-professional studies in medical, dental, veterinary, agricultural, and research programs. These courses will also meet the early course requirements for the Bachelor's of Science Degrees in Biology, Chemistry and Physics.	**Plan of Action:** Continue to provide information to assist the state Chancellor's Office to accep the AS in biology at Yuba College **Location:** Yuba College - All		

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An additional benefit for students earning the A.S. degree from Yuba College is the enhancement in scientific problem solving capabilities and generalized laboratory skills. Consequently, it is hoped that earning this A.S. degree will improve the marketability of these students in obtaining employment. Finally, many students at Yuba College transfer to four-year institutions in pursuit of a degree in Biological Sciences. This A.S. degree would allow those transfer students to obtain a two-year degree, as a minimum, should they eventually be unable, for whatever reason, to complete their four-year degree in Biology. The biology department faculty reviewed their program courses and established the following Biology A.S. Degree program for Yuba College students to give an introductory level degree in biological science that is intended to exhibit competency in college level science. The program will include the following courses: BIOLOGY 1 Principles of Biology (5 units) BIOLOGY 2 General Zoology (4 units) BIOLOGY 3 General Botany (4 units) CHEMISTRY 1A General Chemistry I (5 units) CHEMISTRY 1B General Chemistry II (5 units) PHYSICS 2A General Physics (3 units) PHYSICS 3A General Physics Lab (1unit) PHYSICS 2B General Physics (3 units) PHYSICS 3B General Physics Lab (1 unit)			

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OR PHYSICS 4A Mechanics (4 units) PHYSICS 4B Electromagnetism (4 units) AND one of the following depending on where the student will transfer: MATH 1A First Year Calculus (5 units) MATH 9 Calculus for Business, Social and Life Science (4 units) STAT 1 Introduction to Statistical Methods (4 units) Also recommended, but not required: CHEMISTRY 18A Organic Chemistry I (4 units) CHEMISTRY 18B Organic Chemistry II (4 units) TOTAL UNITS: 35-36 GENERAL ED UNITS: 25 TOTAL UNITS FOR DEGREE: 60-61 **Year(s) Requested:** 2012-2013 **Recommendation Priority:** 2. Medium Priority **Supporting Evidence (SLO, WSCH, etc.):** 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.			
YC - Biology & Ecology Program Recommendations - Transfer Data - The program faculty will evaluate transfer data **Supporting Evidence (SLO, WSCH, etc.):**	**Plan of Action:** Establish a schedule to review transfer data **Budgetary Impact:** None.		

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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%.			
YC - Biology & Ecology Program Recommendations - 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. **Year(s) Requested:** 2012-2013 **Request Date:** 10/15/2012 **Recommendation Priority:** 3. High Priority **Supporting Evidence (SLO, WSCH, etc.):** Districtwide, the Biology/Ecology program	**Plan of Action:** 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. **Type:** Facilities **Budgetary Impact:** Unknown, would need to be evaluated by a contractor. **Location:** YC Marysville Campus **DE Related:** No		
	Plan of Action: Develop an estimate for microscope storage for 804. The current cabinets do not fit the micrscopes and had to be modified, making		

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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).	them less sturdy and a safety hazard. Students often jam the microscope into the shelf, thus leading to the possiblity of equipment damage. **Type:** Facilities **Budgetary Impact:** Unknown, would need a bid. **Location:** YC Marysville Campus **DE Related:** No		
	Plan of Action: The restroom facilities in the 800 Building area are inadequate, due to size reduction in the remodel. Request for additional restroom facilities is needed. **Type:** Facilities **Budgetary Impact:** Unknown. **Location:** YC Marysville Campus **DE Related:** No		
	Plan of Action: 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. **Type:** Facilities **Budgetary Impact:** Increased facilities budget required, unknown amount. **Location:** Yuba College - All **DE Related:** Yes		

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	Plan of Action: Install deionized water in 808/853C to support Microbiology prep, Bio 6 and Bio 15 coursework. Would need a contractor to evaluate and bid. **Type:** Facilities **Budgetary Impact:** Unknown. **Location:** YC Marysville Campus **DE Related:** No		
	Plan of Action: Modify the Anatomy storage rooms to house 4 cadavers (rather than the current 3). Add shelving required for storage of cadaver supplies, organs, etc. **Type:** Facilities **Budgetary Impact:** Unknown. **Location:** YC Marysville Campus **DE Related:** No		
YC - Biology & Ecology Program Recommendations - 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. 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.	**Plan of Action:** Continue annual safety reviews of our facilities. Add interim review as needed. Evaluate styles and costs of eyewash stations. **Type:** Facilities **Budgetary Impact:** None at this time. **Location:** YC Marysville Campus **DE Related:**		

Recommendations	Plans of Action & Budgetary Impact / Tasks	Status	Feedback & Follow-Up
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. **Request Date:** 10/15/2012 **Recommendation Priority:** 2. Medium Priority **Supporting Evidence (SLO, WSCH, etc.):** 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).	No **Plan of Action:** Evaluate best use of classrooms and adjust assignment as needed. **Type:** Facilities **Budgetary Impact:** None **Location:** YC Marysville Campus **DE Related:** No **Plan of Action:** 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. **Type:** Facilities **Budgetary Impact:** Unknown **Location:** Clear Lake Campus **DE Related:** No		
YC - Biology & Ecology Program Recommendations - 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	**Plan of Action:** Continue to evaluate a Student Study Center for Biology/Ecology. **Type:** Facilities **Budgetary Impact:** none currently **Location:** YC Marysville Campus		

Recommendations	Plans of Action & Budgetary Impact / Tasks	Status	Feedback & Follow-Up
labs to be added to the Sutter Center to support basic laboratory classes such as Bio 10L. **Request Date:** 10/15/2012 **Recommendation Priority:** 3. High Priority **Supporting Evidence (SLO, WSCH, etc.):** 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.	**DE Related:** Yes **Plan of Action:** Work with Sutter Center administration on a basic list of requirements for facilities and equipment for a Biology lab at Sutter. **Type:** Facilities **Budgetary Impact:** None currently. **Location:** Sutter County Campus **DE Related:** No		
YC - Biology & Ecology Program Recommendations - 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.		
YC - Biology & Ecology Program Recommendations - Improve Curriculum - 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	**Plan of Action:** Program facuty will establish a meeting schedule to specifically discuss courses, curriculum and teaching.		

Recommendations	Plans of Action & Budgetary Impact / Tasks	Status	Feedback & Follow-Up
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. 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:** 3. High Priority			