Annual Program Review Update

Program/Discipline: **Biol/EnvSc**

Submitted by (names): **Karen Reiss, Teresa Sholars**
Contact Information (phone and email): **x4220/ karen-reiss@redwoods.edu; x2696/teresa_sholars@redwoods.edu**
Date: **9/22/08**

1. **Program/Discipline Changes**
   Has there been any change in the status of your program or area since your last Annual Update? (Have you shifted departments? Have new degrees or certificates been created by your program? Have activities in other programs impacted your area or program? For example, a new nursing program could cause greater demand for life-science courses.)
   
   **Note:** curricular changes should be addressed under **12 (Curriculum)**.

   ☒ No (go to next question)
   ☒ Yes  Describe the changes below:
   
   Newly defined Associate degrees in Liberal Arts: Science and Liberal Arts: Science Exploration have further clarified which courses are for life science majors and which are general education courses. Also, we continue to promote the Science Transfer Prep program and faculty advising process which better steers students towards appropriate math, chemistry and physics and biology courses. Finally, nursing had increased the number of students accepted into the RN program each year increasing need for pre-nursing life science courses.

2. **Program/Discipline Trends**
   Refer to the data provided (data link is located at [http://inside.redwoods.edu/Assessment/ProgRev/TrendData.asp](http://inside.redwoods.edu/Assessment/ProgRev/TrendData.asp)) and describe the trends in enrollment, retention, success rates, and student demographics. If applicable, describe how changes in these areas are impacting your discipline and describe efforts within your area to address these impacts.

   **Biol FTES were 109.4 in Fall 2007 and 121.75 in Spring 2008. Biol student Retention averaged 87% for all classes which is consistent with past years. Biol student Success averaged 73% which was lower than past years. The courses that contributed to this difference, determined by success scores of 65% or lower, were Biol 6 (Human Anatomy) and Biol 16, 20, 21, and 24, courses in either the Natural History and Marine Science certificate programs. While we feel we need to watch to see if this is a trend, we also believe that students**
sometimes are surprised by the rigor expected in these classes, i.e., taking a fungi class to learn what's good to eat and discovering that serious science is expected of them.

EnvSc FTES were 28.88 in Fall 2007 and 15.88 in Spring 2008. In EnvSc student Retention averaged 87% in 2007/2008 and student Success averaged 68% in 2007/2008, both of which are consistent with past years.

3. Labor Market Review (for occupational programs)
   Occupational programs must review their labor market data. Links to various reports and information, as well as instructions on how to create program-specific reports, can be found at [http://inside.redwoods.edu/Assessment/ProgRev/LaborMarketResources.asp](http://inside.redwoods.edu/Assessment/ProgRev/LaborMarketResources.asp). Institutional Research (IR) is available to help with surveys and reviews. All survey data (whether collected by your program or the institution) should be sent to IR to be kept on record.
   a. Meets a documented labor market demand,
   b. Does not represent duplication of other training programs (in the region), and
   c. Is of demonstrated effectiveness as measured by the employment and completion success of its students.

4. Budget Resources
   List your area’s budget for the following categories in the table below. Restricted funds have a sponsor/grantor/donor (federal, state, local government, etc). The funds are restricted by the sponsor/grantor/donor. Everything else is unrestricted.

<table>
<thead>
<tr>
<th>Category</th>
<th>Unrestricted Funds</th>
<th>Restricted Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EKA</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply and printing budget</td>
<td>7600.00 (Supplies)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1712.00 (MSE Printing)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>500.00 (MSE Office Supplies)</td>
<td></td>
</tr>
<tr>
<td>Equipment replacement and repair budget</td>
<td>300.00</td>
<td></td>
</tr>
<tr>
<td>Professional Development</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Work-study funding</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Additional Budget Items</td>
<td>3700.00 (Service Contract)</td>
<td></td>
</tr>
<tr>
<td><strong>MENDO</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply and printing budget</td>
<td>4100.00</td>
<td></td>
</tr>
<tr>
<td>Equipment replacement and repair budget</td>
<td>100.00</td>
<td></td>
</tr>
<tr>
<td>Professional Development</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Work-study funding</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Additional Budget Items</td>
<td>1505.00 (Field Trips)</td>
<td></td>
</tr>
</tbody>
</table>
Is the funding for these areas adequate? ☐ Yes ☒ No
If not, describe the impact of unaddressed needs on your discipline or program.

**EKA** and **MENDO** "Additional Budget Items" cover service contracts for deionizing water columns and the autoclave. Other allocated funds are not sufficient for instructional equipment maintenance, repair or replacement. This was noted in last year's Annual Update. In particular, microscopes, microscope slides, cadavers, cadaver fluids, refrigerators and freezers, balances, and pH meters are all in need of servicing and/or replacement.

**MENDO** A nursing 1-time grant was obtained by Judy Kvinsland to buy consumables (media, supplies, cadaver, etc.) for nursing prerequisites: $6,860 for Instructional Supplies for 2007F and for 2008 $3,430. We cannot offer these classes without funding for these items.

5. **Learning Resource Center Resources**
   Is the level of resources provided by the Academic Support Center and Library (Learning Resource Center) adequate. ☐ Yes ☒ No
   If not, explain.

**EKA** There are no experienced life science tutors in the ASC. The resource and journal materials are inadequate for meaningful research activities for many Biol and EnvSc courses. There are currently numerous journals focused on the specific disciplines of ecology, organismal biology, molecular biology, and environmental philosophy that would be beneficial to students in EnvSc courses and Biol courses. Subscribing to online versions of these journals would greatly benefit students and faculty.

**MENDO** Our one experienced science tutor will be transferring this spring to HSU and we lose our only experienced life science tutor.
6. **Student Services Resources**

Complete the following grid concerning Student Services Areas.

<table>
<thead>
<tr>
<th>Student Services Area</th>
<th>Does the area satisfy the needs of your discipline?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>There is a connection to this discipline/program and YES the student services area does satisfy the needs of the discipline.</td>
</tr>
<tr>
<td></td>
<td>There is a connection to this discipline/program and NO the student services area does not satisfy the needs of the discipline.</td>
</tr>
<tr>
<td></td>
<td>Uncertain about the student service area provided or how it connects to this discipline/program</td>
</tr>
</tbody>
</table>

- Admissions and Records
- Counseling
- Financial Aid
- Career Services
- Disabled Student Programs and Services (DSPS)
- Extended Opportunities Programs and Services (EOPS)
- CalWorks
- Residence Halls
- Upward Bound
- Student Conduct

*If a lack of support was indicated in the table above, describe your program/discipline need.*
7. Faculty Resource Needs

Complete the Faculty Employment Grids below (data link is provided at [http://inside.redwoods.edu/Assessment/ProgRev/FacultyLoadDistribution.asp](http://inside.redwoods.edu/Assessment/ProgRev/FacultyLoadDistribution.asp)).

Please list full- and part-time faculty numbers in separate rows:

### Faculty Load Distribution in the Program

<table>
<thead>
<tr>
<th>Discipline (e.g., Math, English, Accounting)</th>
<th>Total Teaching Load for fall 2007 term</th>
<th>% of Total Teaching Load by Full-Time Faculty</th>
<th>% of Total Teaching Load Taught by Part-Time Faculty</th>
<th>% Change from fall 2006</th>
<th>% Change from fall 2005</th>
<th>Explanations and Additional Information (e.g., retirement, reassignment, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol</td>
<td>133.75</td>
<td>63%</td>
<td>37%</td>
<td>same TLUs but more taught by PT faculty</td>
<td>+3 TLUs</td>
<td>FT faculty unbanked TLUs and load shifted to PT faculty</td>
</tr>
<tr>
<td>EnvSc</td>
<td>30.45</td>
<td>70%</td>
<td>30%</td>
<td>+10 TLUs</td>
<td>-9 TLUs</td>
<td></td>
</tr>
</tbody>
</table>

### Faculty Load Distribution in the Program

<table>
<thead>
<tr>
<th>Discipline (e.g., Math, English, Accounting)</th>
<th>Total Teaching Load for spring 2008 term</th>
<th>% of Total Teaching Load by Full-Time Faculty</th>
<th>% of Total Teaching Load Taught by Part-Time Faculty</th>
<th>% Change from spring 2007</th>
<th>% Change from spring 2006</th>
<th>Explanations and Additional Information (e.g., retirement, reassignment, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol</td>
<td>170.25</td>
<td>70%</td>
<td>30%</td>
<td>+34 TLUs</td>
<td>+27</td>
<td></td>
</tr>
<tr>
<td>EnvSc</td>
<td>28.5</td>
<td>53%</td>
<td>47%</td>
<td>+7</td>
<td>+10 TLUs</td>
<td></td>
</tr>
</tbody>
</table>

da. Describe the status of any approved, but unfilled **full-time** positions. 
Ralph Reiner retired several years ago and has yet to be replaced. In the past, retirement would have meant an automatic replacement approval.

b. If you are requesting a **Full-Time Faculty** position develop an attachment to this report that addresses the following criteria (as listed in AR 305.03)
   * The ratio of full-time to associate faculty
   * Current availability of associate faculty
   * Relation to program review recommendations
   * Effect on diversity of the faculty
• Effect on academic offerings and ability to serve students and the community
• Effect on the vitality and future direction of a program and/or the college
• Effect on student learning

See attachment.

c. If your Associate Faculty needs are not being met, describe your efforts to recruit Associate faculty and/or describe barriers or limitations that prevent retaining or recruiting Associate Faculty. The major barrier to recruiting Associate Faculty is not finding candidates with minimum qualifications, but finding candidates with expertise. Expertise in rapidly advancing fields within biology such as cell and molecular biology and human physiology is necessary to teach these subjects at an appropriate level. We have several HSU Master's students who are gifted teachers, but few have expertise in these critical areas.

8. Staff Resources
Complete the Classified Staff Employment Grid below (please list full- and part-time staff). This does not include faculty, managers, or administration positions. If a staff position is shared with other areas/disciplines, estimate the fraction of their workload dedicated to your area.

<table>
<thead>
<tr>
<th>Assignment (e.g., Math, English)</th>
<th>Full-time (classified) staff (give number)</th>
<th>Part-time staff (give number)</th>
<th>Gains over Prior Year</th>
<th>Losses over Prior Year (give reason: retirement, reassignment, health, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EKA Chem/ Bio</td>
<td>1</td>
<td>1 @ .25</td>
<td>no change</td>
<td>no change</td>
</tr>
<tr>
<td>EKA Biol</td>
<td>1 (shared)</td>
<td>no change</td>
<td>no change</td>
<td>no change</td>
</tr>
<tr>
<td>MSE</td>
<td></td>
<td>no change</td>
<td>no change</td>
<td>no change</td>
</tr>
</tbody>
</table>

Do you need more full-time or part-time classified staff? ☐ yes ☒ no
If yes, explain why.

9. Facilities, and Classroom Technology
Are teaching facilities adequate for achieving the educational outcomes of this discipline/program? ☐ Yes ☒ No

If No was checked, complete and attach Facility Form (facilities.form) for each instructional space that does not meet the needs of this discipline/program:
10. Equipment

Is the available equipment (other than classroom specific equipment described in the facilities section) adequate to achieve the educational outcomes of your program/discipline? ☐ Yes ☒ No

If No was checked, complete the following grid for each piece of equipment being requested for this area/discipline:

EKA Biol has seen consistent demand for Biol 2, Biol 6, and Biol 7, which are prerequisites for the nursing program. These courses offer 2 sections each per semester and routinely fill early in the regular registration period. Faculty are inundated by students begging to get in, but our offerings are limited by number of qualified faculty, number of rooms set up to teach these courses, and equipment and supply budgets.

In particular, we only have one room that is equipped for teaching Biol 2 (Microbiology), and we can’t add more sections to this room because we don’t have enough equipment to store student work. This equipment is also used by LVN 114 and Biol 3, thus limiting enrollment in these classes as well. Moreover, as we modernize our labs and our courses there will be an even greater demand for more courses to incorporate biotechnology which will require the growth and maintenance of bacterial cultures.

In Biol 6, the 100+ students we train each year cause rapid wear-and-tear on the cadavers, and these need to be replaced at a rate of 1 per 3-5 years, and we are overdue for replacement. All our courses use microscopes for which we have no replacement or repair budget.

Finally, our vast collection of taxidermied materials used by Biol 1, Biol 4, Biol 18, Biol 20, many forestry and agriculture courses, and on public display, need curation which includes regular freezing for pest-management, and we have no suitable freezer.

In sum, if we ever hope to offer more sections of our high-demand courses, update our other courses, and maintain the instruments, equipment and specimens we have now, we need the following items, purchased from any standard scientific vendor (e.g., Fisher, Wards), and in the case of the cadavers, UC Davis Medical School.
<table>
<thead>
<tr>
<th>Equipment</th>
<th>Approximate Price</th>
<th>Number of students using equipment each semester</th>
<th>Describe how the equipment allows achievement of program/discipline educational outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>37°C incubator</td>
<td>$7000</td>
<td>100</td>
<td>enable acquisition of basic technical expertise and concepts in microbiology, cell biology, and molecular biology</td>
</tr>
<tr>
<td>30°C incubator</td>
<td>$7000</td>
<td>100</td>
<td>“”</td>
</tr>
<tr>
<td>digital pH meter</td>
<td>$500</td>
<td>100</td>
<td>“”</td>
</tr>
<tr>
<td>refrigerator</td>
<td>$500</td>
<td>100</td>
<td>“”</td>
</tr>
<tr>
<td>50 - 10mL glass pipets</td>
<td>$625</td>
<td>100</td>
<td>“”</td>
</tr>
<tr>
<td>50 - 5mL glass pipets</td>
<td>$500</td>
<td>100</td>
<td>“”</td>
</tr>
<tr>
<td>50 - 1mL glass pipets</td>
<td>$425</td>
<td>100</td>
<td>“”</td>
</tr>
<tr>
<td>8 - 5mL micropipetor</td>
<td>$199.60</td>
<td>100</td>
<td>“”</td>
</tr>
<tr>
<td>8 - 20mL micropipetor</td>
<td>$199.60</td>
<td>100</td>
<td>“”</td>
</tr>
<tr>
<td>pipet tips</td>
<td>$40.00</td>
<td>100</td>
<td>“”</td>
</tr>
<tr>
<td>50 - inoculating loops</td>
<td>$130</td>
<td>100</td>
<td>“”</td>
</tr>
<tr>
<td>chest freezer</td>
<td>$500</td>
<td>all benefit</td>
<td>stored DNA and reagents used for molecular biology labs; necessary for pest control of taxidermied specimens used by students and viewed in display areas</td>
</tr>
<tr>
<td>acid storage cabinet</td>
<td>$1300</td>
<td>all benefit</td>
<td>safe storage of lab chemicals (currently acids and bases are stored in the same cabinet which is unsafe)</td>
</tr>
<tr>
<td>human cadaver</td>
<td>$2500</td>
<td>70</td>
<td>enables nursing and art students to learn 3-d anatomy</td>
</tr>
<tr>
<td>histological slides</td>
<td>$300</td>
<td>70</td>
<td>enable nursing and zoology students to learn microscopic anatomy</td>
</tr>
</tbody>
</table>
Equipment Repair

Is the equipment used for your discipline/program in need of repair, which is outside your current budget allotment? *This does not include classroom specific equipment repair described in the facilities section.*  ☒ Yes  ☐ No

If Yes was checked, provide the following information to justify a budget allotment request:

<table>
<thead>
<tr>
<th>Equipment requiring repair</th>
<th>Repair Cost / Annual maintenance cost</th>
<th>Number of students using equipment each semester</th>
<th>Describe how the equipment allows achievement of program/discipline educational outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>microscopes</td>
<td>25 scopes per year @ $50/scope</td>
<td>all biology students use microscopes; heaviest use in Biol 2, 4, 6</td>
<td>can't learn biology without a microscope</td>
</tr>
<tr>
<td>cadaver fluids</td>
<td>$400</td>
<td>70</td>
<td>cadavers held in fluids are less toxic, more pliable, and less prone to microorganism contamination</td>
</tr>
</tbody>
</table>
11. Learning Outcomes Assessment Update.

List all expected program-level outcomes, whether you have completed the assessment loop (use of results) or not. For each outcome, identify the means of assessment and the criteria for success. Summarize the data that have been collected in the ‘Assessment Results’ column. If no data have been collected and analyzed for a particular outcome, use the ‘Assessment Results’ column to clarify when these data will be collected and analyzed. In the fourth column, indicate how the assessment results are being used to improve the program.

<table>
<thead>
<tr>
<th>Program Outcomes (Not all disciplines have program-level outcomes)</th>
<th>Means of Assessment and Performance Criteria</th>
<th>Assessment Results Summary</th>
<th>Use of Results</th>
</tr>
</thead>
</table>
| For biology majors: successful transfer to a four-year institution | 1) % transfer students  
2) time to completion of degree program | Five years of data from HSU suggest 20 students/year transfer, few graduate within two years following transfer, but their GPA's are respectable. We do not have reliable data on the number of majors at CR, nor do we have data from other transfer institutions. | These data and anecdotal evidence led us to establish the Science Transfer Prep program, to ensure that majors transfer ready to take junior-level coursework. This program is now codified by a new degree program (LA: Science) for which we will need to define outcomes and assessment strategies in the following year. |
| For students in G.E. courses: Satisfaction of General Education program learning outcomes. | yet to be defined | | |
| For Health Occupations students: successful matriculation in the Health Occ program of their choosing | 1) % successful matriculations  
2) timely and successful completion of their chosen program | | |
| For LA: Science Exploration | yet to be defined | | |
| For LA: Science | yet to be defined | | |
List all course-level student learning outcomes for which some assessment activity (assessment, analysis, or use of results) has taken place since the most recent program review, and complete the table below as appropriate.

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Means of Assessment and Performance Criteria</th>
<th>Assessment Results Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biol 1</strong> - Apply the scientific method to critically evaluate observable phenomenon</td>
<td>Average score of 70% or higher on the following exam question evaluates the students understanding of the scientific method by describing a protocol that is repeatable, by identifying variables and a control and by differentiating between data and conclusions: Someone in class says that by standing on your head and counting to 100 you can (1) lower your body temperature by up to five degrees and (2) see god. Others in class say that this is ridiculous. As a scientist describe in detail how you would resolve this dispute.</td>
<td>Nearly all students understood the process of making observations, formulating and testing a hypothesis and drawing conclusions. Of 49 test takers, half didn't include controls. Less than 5% got the hypothesis wrong. 15% didn't account for what would need to be done if the tests disproved the hypothesis.</td>
</tr>
<tr>
<td><strong>Biol 2</strong> - Apply the scientific method to critically evaluate observable phenomenon</td>
<td>Average score of 70% or higher on the following exam question evaluates the students understanding of the scientific method by describing a protocol that is repeatable, by identifying variables and a control and by differentiating between data and conclusions: The British General Board of Health concluded in 1855 that the Broad Street cholera epidemic resulted from fermentation of “nocturnal clouds of vapor” from the polluted Thames River. How could this be proved or disproved using the scientific method? Be sure to include all steps of the scientific method in your answer.</td>
<td></td>
</tr>
<tr>
<td><strong>Biol 4</strong> - Recognize animal life, identify animals to major taxon (e.g. phylum) on sight, and be able to use resources such as field guides and dichotomous keys to identify animals more specifically (e.g., insects to family or vertebrates to genus and species).</td>
<td>Average grade of 70% or higher on specimen-based “Practical” exams</td>
<td></td>
</tr>
<tr>
<td>Course</td>
<td>Requirements/Examples</td>
<td>Grade Required/Exam Question</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Biol 6</td>
<td>- Identify and classify the major tissue types, organs and organ systems in the human body, microscopically and on cadavers.</td>
<td>Average grade of 70% or higher on specimen-based “Practical” exams</td>
</tr>
<tr>
<td>Biol 7</td>
<td>- Define homeostasis and illustrate the importance of feedback loops in the function of organ systems using specific examples.</td>
<td>Average score of 70% or higher on the following exam question: Define homeostasis, and give physiological examples of positive and negative feedback (discussing how they work). Explain why negative feedback is the main mechanism for maintaining homeostasis.</td>
</tr>
<tr>
<td>Biol 20</td>
<td>- Recognize and name the major biotic communities in California.</td>
<td>Average score of 70% or higher on the following exam question: Name the specific biotic community in which you are most likely to find each of the following organisms: cattails, interior live oak, Ensatina salamander, Joshua tree, cordgrass, bristlecone pine, saguaro cactus, anemone, sand verbena, native perennial bunchgrass, manzanita, Ponderosa pine, European beach grass, big sagebrush, acorn woodpecker</td>
</tr>
<tr>
<td>EnvSc 10</td>
<td>in development</td>
<td></td>
</tr>
<tr>
<td>EnvSc 11</td>
<td>- Define key terms and apply them in critical, analytical writing.</td>
<td>In the last quarter of the semester, students will respond to this prompt: Choose some specific term or idea we have studied and discussed this semester and define it, then describe how it relates to some current issue worthy of environmental ethical consideration.” Course instructors will rank and assess student proficiency based on a rubric they devise.</td>
</tr>
</tbody>
</table>
Discuss the extent to which part-time faculty (if applicable) have been involved in the dialogue about assessing student learning outcomes:

Associate faculty have contributed to writing course outlines, defining student learning outcomes, and determining means of assessing those outcomes, for every course they teach.

12. Curriculum Update

Identify curricular revisions and innovations undertaken

a. in the last year.

Last year Biol 1, 3, 5, 6, 7, 16, 17, 19, 20, 21, 22, 23, 24, 25, and 26 were revised and approved by the Curriculum Committee, and Biol 10 was inactivated. The inactivation of Biol 10 was due to that course's increasing redundancy with Biol 1. Biol 1, 10 and 15 were raised to 4 units (due to an increase from 2 to 3 lecture hours per week) consistent with CSU and UC articulation demands. Last year, EnvSc 11 was updated.

b. planned for the coming year.

Biol 2 is currently on the Curriculum Committee agenda. Biol 8 and the Biol 120 series are currently being revised and will be submitted to the Curriculum Committee this semester. EnvSc 10 is currently on the Curriculum Committee agenda, and EnvSc 15 is currently being revised and will be submitted to the Curriculum Committee this semester. At this point 100% of our curriculum will be updated.

Complete the grid below. The course outline status report can be located at: http://www.redwoods.edu/District/IR/Reports/Curriculum/Curriculum_Course_Outlines.htm

Course Outline Status

<table>
<thead>
<tr>
<th>Biology</th>
<th>General Biology</th>
<th>03/28/08</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL-1</td>
<td>Intertidal Ecology</td>
<td>11/03/89</td>
<td>Out of Date</td>
</tr>
<tr>
<td>BIOL-120E</td>
<td>Wildflowers/Coniferous Forests</td>
<td>11/15/89</td>
<td>Out of Date</td>
</tr>
<tr>
<td>BIOL-120H</td>
<td>Marine Mammals of North Coast</td>
<td>11/02/89</td>
<td>Out of Date</td>
</tr>
<tr>
<td>BIOL-120K</td>
<td>Bird Migration</td>
<td>11/02/89</td>
<td>Out of Date</td>
</tr>
<tr>
<td>BIOL-120L</td>
<td>Intro Idnet/North Coast Birds</td>
<td>11/03/89</td>
<td>Out of Date</td>
</tr>
<tr>
<td>BIOL-120M</td>
<td>Mosses &amp; Allies - North Coast</td>
<td>10/01/98</td>
<td>Out of Date</td>
</tr>
<tr>
<td>BIOL-120O</td>
<td>Marine Algae</td>
<td>02/11/00</td>
<td>Out of Date</td>
</tr>
<tr>
<td>BIOL-120P</td>
<td>Marine Biology</td>
<td>03/23/07</td>
<td>Current</td>
</tr>
<tr>
<td>BIOL-16</td>
<td>Birds of the North Coast</td>
<td>03/23/07</td>
<td>Current</td>
</tr>
<tr>
<td>BIOL-17</td>
<td>Trees, Shrubs, &amp; Wildflowers</td>
<td>09/28/07</td>
<td>Current</td>
</tr>
<tr>
<td>BIOL-18</td>
<td>Nat'l Hist of No Coast Mammals</td>
<td>03/28/08</td>
<td>Current</td>
</tr>
<tr>
<td>BIOL-19</td>
<td>Rare Plants: Species/Spcl Cncn</td>
<td>10/12/07</td>
<td>Current</td>
</tr>
<tr>
<td>BIOL-2</td>
<td>Microbiology</td>
<td>04/11/97</td>
<td>Out of Date</td>
</tr>
<tr>
<td>BIOL-20</td>
<td>Natural History</td>
<td>09/28/07</td>
<td>Current</td>
</tr>
<tr>
<td>BIOL-21</td>
<td>Mushrooms of the North Coast</td>
<td>09/28/07</td>
<td>Current</td>
</tr>
</tbody>
</table>
If the proposed course outlines updates from last year’s annual update (or comprehensive review) were not completed, please explain why.

Some course outlines were not completed due to pending discussion and decision by the Curriculum Committee on how to handle Special Topics courses. The Biol 120 series are currently being revised in accordance with these discussions as Biol 99. Some course outlines were not revised because they are taught mainly by Associates, and were lower priority in the revision sequence. These are being revised this semester (Biol 8, EnvSc 15, EnvSc 22). Finally, EnvSc 11 is an interdisciplinary course, required cross-departmental collaboration for revisions, and is currently being revised.

13. Communication
Are the current lines of administrative, faculty, and staff communication adequate to meet the needs of this discipline/program? Describe representative example of effective or ineffective communication.

Yes, but only thanks to the current Area Coordinator/ Division Chair structure. Our frustrations regarding communication have mainly to do with Work Order channels. For example, Biol had submitted several Work Orders requesting internet access in our lab rooms and received no response for almost two years.
We asked our Division Chair to investigate and we started to get some response. If it weren’t for Division Chair intervention we would still be wondering what happened to our work orders. With any luck, we’ll have internet by the end of the week, but even so, we feel the process is unusually cumbersome and ineffective.

List any action plans submitted since your last annual update. Describe the status of the plans. If they were approved, describe how they have improved your area.

15. Goals and Plans
If you have recently undergone a comprehensive review, attach your Quality Improvement Plan (QIP) if applicable.
☐ QIP Attached
If you do not have a QIP, refer to the goals and plans from your previous annual update. For each goal and/or plan, comment on the current status. List any new goals and plans your area has for the coming year, and indicate how they are aligned with the goals/objectives in CR’s Strategic Plan. (CR’s strategic plan is located on the web at http://inside.redwoods.edu/StrategicPlanning/strategicplan.asp).

Biol
From the 2007/2008 Annual Update:
Our discipline goals for this academic year are to:
1) Update all curriculum.
2) Actively recruit students into the Science Transfer Prep program.
3) Better define assessment strategies for each course and program-wide.
4) Start collecting data to determine whether we are meeting our objectives.

We are making progress on these goals as we have updated nearly all curriculum, have experienced dramatic increase in numbers of transfer students and counselors actively seeking faculty advice on student course choices, and we have started the assessment cycle for our course-level student learning outcomes. Our goals for the coming year are:
1) to complete the assessment cycle and begin implementing the necessary adjustments to our courses and/or course outlines to achieve our objectives,
2) to start, with science colleagues, defining program-level outcomes and assessment for the new LA: Science and LA: Science Exploration degree pathways,
3) to start incorporating biotechnology labs into our curriculum, taking advantage of recently acquired DNA-analysis equipment and reagents (thanks to a 2007/2008 Block Grant)
4) to take steps to increase FTES by adding a new full time faculty member, and new equipment and classroom technologies

EnvSc
From the 2007/2008 Annual Update:

Our plan includes the following:

(1) Update curriculum outlines
(2) Develop methods to assess student learning outcomes district-wide
(3) Access enrollment trends, success rate of students, and other data to provide feed-back for improvements”

We are making progress on these goals as full time and associate faculty collaborate on these projects. Unrevised curriculum is currently in the works, and assessment of course level student learning outcomes are beginning this semester. As for future plans, environmental science and biology instructors plan to begin designing a new course that focuses on interdisciplinary field studies. Our aim is to increase broad understanding of local areas, including human history, natural history, and environmental issues, and practical application of scientific reasoning and tools in a field environment.
Facilities, and Classroom Technology Form
Program/Disciplines: Biol/ EnvSc
Year: 2008/2009
Submitted by: Karen Reiss

List classroom or instructional space name/number: LS 107, 108, 112, 113

Check if any of the following are not adequate:
☐ Ventilation / room temp  ☑ ADA access  ☐ Number of seats / work stations  ☑ Technology (computers, projectors, internet)

☐ Other (briefly describe):

Describe the specific action and estimated cost (if available) to make this space adequate for your instructional needs:
Internet access in all rooms: Run wires through ceiling from LS 111 to each room.
Ceiling mounted projector in LS112: Mount projector and connect to computer; all hardware has already been purchased. Install suspended corner screen; needs purchase.
Ceiling mounted projector in LS107: Mount projector and connect to computer; all hardware expect ceiling mounts and cables have been purchased.

List the average number of discipline/program sections scheduled in this room each semester, and the total number of students enrolled in these sections.
Sections: 5 (though these typically include lecture and 1-2 lab sessions weekly)  Students: 24 each
Facilities, and Classroom Technology Form  
Program/Disciplines: Earth and Biological Sciences  
Year: 2008-2009  
Submitted by: Greg Grantham

List classroom or instructional space name/number: M-122

Check if any of the following are not adequate:

- [x] Ventilation / room temp
- [x] ADA access
- [ ] Number of seats / work stations
- [x] Technology (computers, projectors, internet)
- [ ] Other (briefly describe):

Describe the specific action and estimated cost (if available) to make this space adequate for your instructional needs:
The room is outdated and not ADA compliant. The student tables are crowded too closely together for wheelchairs to have access, and students cannot safely pass down the aisles. There are no safe places for students to store their backpacks, which further reduces the accessibility of the aisles. The student sinks are too small to be useful, and there is only one large sink in the classroom. Lengthy delays in waiting for the opportunity to use the single sink are common. The ventilation systems are inadequate to vent formalin and other noxious fumes. There is insufficient cross ventilation in the classroom, so the room is frequently overheated on warm days.

List the average number of discipline/program sections scheduled in this room each semester, and the total number of students enrolled in these sections.
Sections: 8  
Students: 100
Facilities, and Classroom Technology Form
Program/Disciplines: Environmental and Biological Sciences
Year: 2008-2009
Submitted by: Teresa Sholars

List classroom or instructional space name/number: M-120

Check if any of the following are not adequate:

- [x] Ventilation / room temp
- [x] ADA access
- [x] Number of seats / work stations
- [x] Technology (computers, projectors, internet)
- [ ] Other (briefly describe):

Describe the specific action and estimated cost (if available) to make this space adequate for your instructional needs:
The room is outdated and not ADA compliant. The student tables are crowded too closely together for wheelchairs to have access, and students cannot safely pass down the aisles. There are no safe places for students to store their backpacks, which further reduces the accessibility of the aisles. There are no student sinks. There is only one large sink in the back of the classroom. Lengthy delays in waiting for the opportunity to use the single sink are common. The ventilation systems are inadequate to vent formalin and other noxious fumes. There is insufficient cross ventilation in the classroom, so the room is frequently overheated on warm days. The cadaver is kept in a room that is only accessible from the front of the classroom.

There are only 22 seats in the classroom. They are so close together that a student could not easily use a microscope and have their books on the table in front of them. When students are sitting it is impossible for the instructor to walk behind them to help them with their microscope work.

There are no side boards for class demonstration material. There is one small counter in the back of the room only.

Summary
The limitations of the current space that hamper learning are listed below:
1. Insufficient electrical outlets for faculty/student use
2. Insufficient counter space for lab displays and equipment
3. Lack of table space for map/chart use
4. Lack of wheelchair accessible lab space
5. Insufficient ventilation
6. Poor lighting (All classrooms/labs should have ample natural lighting and should be able to be completely darkened for some activities.
7. Insufficient number/size sinks
8. Student sinks at each student work station act as garbage traps and reduce the available lab counter space for students (=they...
should be eliminated at individual stations and provided amply at the perimeter benches and at the end of some of the student benches)

9. Insufficient lab prep space (for lab technician work) and no fume hood in prep area.

10. Lack of internet access for students
11. Lack of classrooms computers for student use
12. Lack of current technology for teaching including Symposium-type interface and wireless computer access
13. Insufficient storage space
14. Uncomfortable and noisy student chairs
15. Insufficient space for simultaneous use of radar and charts
16. Insufficient number of microscopes for each lab
17. Lack of floor drain near marine aquaria
18. Insufficient wall space for display of instructional materials
19. Poor sound system for video, DVD, and PowerPoint displays
20. Lab tables are much too small for general lab work
21. Floor plan does not allow enough space per student, space between benches not adequate for safe passage. None of the rooms are wheelchair accessible.
22. Traffic patterns within the classrooms are not laid out safely. (Students and staff must have safe unimpeded passage throughout the instructional spaces.)
23. Cadaver storage room and ventilation for dissection not effective..

List the average number of discipline/program sections scheduled in this room each semester, and the total number of students enrolled in these sections.
Sections: 6  Students: 80
ATTACHMENT: Request for full time EKA Biology faculty

Criteria according to A.R. 305.03

- **The ratio of full time to Associate faculty**  
  We have between 25% and 35% part time faculty teaching at any one time.

- **Current availability of Associate faculty**  
  We are trying to grow our pool of qualified associate faculty but it is hard to find candidates that meet minimum qualifications and have expertise teaching the pre-nursing curriculum, Biol 2 (Microbiology), Biol 6 (Human Anatomy) and Biol 7 (Physiology) for the RN program, and LVN 114 for the LVN program. These areas were covered by Mr. Reiner and are areas where we have untapped potential to grow enrollment.

- **Relation to program review recommendations**  
  2006/2007 annual program review summary cites “high enrollment and demand” as a strength of our program, and suggests that more courses could be filled with “increased staff and supplies”. This document also cites “lack of a full-time faculty in area of physiology” and high demand for Health Occ-related courses (that) cannot be met by current staffing” as obstacles in our area.

- **Effect on diversity of the faculty**  
  A new full time member in this area would strengthen our ability to offer courses in human biology and medicine.

- **Effect on academic offerings and ability to serve students and the community**  
  A direct effect of a new full-time faculty member is to meet the needs of the burgeoning population of pre-nursing and other Health Occupations students. An indirect effect would be to better serve the needs of all our other students (general education and biology transfer). Dr. LaPenta and Dr. Reiss are trying to develop other courses, particularly lecture-only G.E. courses, which would add to significantly add to the FTES of the department. However, they are constrained by the need to teach the majority of the pre-nursing curriculum. This problem is exacerbated by the few Associates qualified to each the pre-nursing curriculum (see above).

- **Effect on the vitality and future direction of a program and/or the college**  
  The vitality and future direction of the Health Occupations programs would benefit by our increased ability to serve their RN and LVN students. The vitality and future direction of our GE program, and LA: Science Exploration would benefit by our ability to develop and offer course offerings in other areas.

- **Effect on student learning**  
  Full time faculty bring consistency of pedagogy to a program, and this is important in the pre-nursing curriculum.