PALO VERDE COLLEGE

BLYTHE, CA

PROGRAM REVIEW

BIOLOGY

2011-2012

By

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EXECUTIVE SUMMARY

Biology

1. **Program Strengths:**

    a. Faculty commitment to tracking and improving student learning through pre- and post-tests and through implementation of a rubric.

    b. The Biology program and faculty provides important curriculum support the PVC's nursing program.

    c. Faculty involvement in professional associations and professional development programs.

    d. Faculty development of online course in Biology to provide students with innovative teaching approaches.

2. **Program Weaknesses:**

    Program faculty has indicated the need for tutoring services available to biology students.

3. **Recommendations for Program Improvement:**

    Continue ongoing efforts to monitor and evaluate student learning and implement changes that continue to enhance student learning.

4. **Committee Determination:**

    Report is accepted and may proceed to the next step in the process.

Program Review Committee Approval Date: April 17, 2012

Program Review
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Part 1: Support of the College Mission

State the purpose of the program.

The Biology Program is designed to provide varied science courses that help address the educational needs of the community. Biology courses are currently used as core and elective requirements for an Associate in Science Degree and General Education respectively. A large number of our courses meet the course requirements transferable to a Bachelor Degree at a 4 year institution.

Describe how the program supports the overall mission of the college as adopted by the Board of Trustees.

The Biology Program provided an exemplary learning environment through teaching, use of the scientific methods to solve problems, proficient use of laboratory techniques, analysis and critical thinking skills and hands-on experiences. Additionally, the goal of the Biology Program supports the college mission by providing courses that include the general education requirements needed for transfer purposes and meet the requirements for the Licensed Vocational Nursing, the Registered Nursing Programs and the Bachelor of Science in Nursing respectively.

Describe the unique institutional goal the program achieves.

The Biology Program provides general education transferable courses and specific courses designed solely toward the completion of the Licensed Vocational Nurse (LVN), the Registered Nurse (RN) and the Bachelor of Science in Nursing (BSN) Programs. Based on the aforementioned, the Biology Program provides opportunity for students to fulfill community dire need for well-trained professional healthcare workers. It satisfies the mission of the college by assisting all prospective students in developing the ability to utilize the scientific method of inquiry to find and comprehend information relating to biological issues and similarly apply that knowledge to their "real lives," including the recognition of ethical aspects of knowledge.

Part 2: Accomplishments in Achieving Goals Outlined in the Previous Program Review

Describe progress in achieving goals outlined in the previous program review, providing evidence documenting such achievements.

The Biology Program successfully accomplished the prior goal outlined in the previous program review of preparing the prospective students for employment. Case in point, 15 former Palo Verde College students upon successful completion of the LVN, RN, BSN and Dental Hygiene Programs are gainfully employed at Palo Verde Hospital, La Paz Regional Hospital in Parker, Arizona, Eisenhower Medical Center, in Rancho Mirage, Ironwood State Prison and Chuckwalla Valley State Prison in Blythe, California respectively.

Explain modifications of goals outlined in the previous program review, providing evidence documenting such modifications.

There were no modifications of goals outlined in the previous program review.

Part 3: Populations Served

Describe the populations served by the program, including special populations.

The populations served by Biology Program include:

- Persons interested in the Licensed Vocational Nursing program
- Persons interested in a Registered Nursing program
- Persons interested in a Bachelor of Science in Nursing program
- Individuals needing continuing educational courses to maintain licenses and certificates
- Students are pursuing the Associate of Science Degree
- Prospective students who are interested in transferring to institutions of higher learning
- Biology Program makes every effort to appeal to a diverse population of students through scheduling arrangements that meet the needs of students including: graduating high school seniors, single parents, disabled, minority, and economically disadvantaged.

Describe other populations that should be served by the program, and describe plans to serve them in the future.

It is our position that courses will continue to be developed to meet the dire need and aspirations of our community.

Part 4: Curriculum History

List the courses constituting the program.

The courses constituting the Biology Program encompass:

- BIO 100 Introduction to Biology
- BIO 101 Introduction to Biology Laboratory
- BIO 110 Basics of Biology
- BIO 111 Basic Microbiology
- BIO 115 Evolution
- BIO 140 Animal Biology (Zoology)
- BIO 141 Introductory Botany (BOT 140)
- BIO 210 Human Anatomy
- BIO 211 Human Physiology
- BIO 280 Selected Topics in Biology
- BIO 290 Selected Studies in Biology

List those courses that have not been successfully offered at least once during the preceding 6 semesters.

- BIO 115 Evolution
- BIO 140 Animal Biology (Zoology)
- BIO 141 Introductory Botany (BOT 140)
- BIO 280 Selected Topics in Biology
- BIO 290 Selected Studies in Biology

Explain why such courses were not successfully offered.

The aforementioned courses were not successfully offered because of student preference for other courses that constitute the Biology Program. Additionally, when offered, courses with poor enrollment are usually cancelled by the Office of Instruction.

Provide a strategy for improving their success, or explain why they should not be removed from the program.

The Biology Program will continue the broad offering of courses and schedules to serve all students. We will schedule effective mix of day, evening and night courses across the Biology curricula.

Part 5: Course Scheduling and Availability

Describe how effectively the scheduling process of classes in the program:

Optimize class availability for day students, evening students and distance education students.

The Biology Program courses offering are student centered. We offer a wide range of courses to our prospective students. We schedule a mix of day and evening courses and many sections across the Biology curricula in order to optimize classes each semester and summer session for day students, evening students and distance education students respectively. The great success in number of students enrolling in Biological courses is an attestation to the aforementioned.

Optimizes Student Learning

Many factors help contribute to student optimize learning in the Biology Program. The quality of instruction is highly imperative. Additionally, the course content, student preparedness, adequate workload, and support services for students enable students to demonstrate problem-solving abilities in the major content areas of biology, analyze the logic of a multiple choice question and similarly choose the correct response from among related items and write clear responses to essay questions without including extraneous information or omitting information necessary to provide a clear answer.

Part 6: Student Learning Outcomes

Describe the process by which the program identifies measures and evaluates student learning outcomes at the course, program and degree levels and provide evidence that this process is being followed.

The Division of Mathematics and Sciences at Palo Verde College attest that understanding of mathematics and sciences is imperative and an integral part of well-rounded education. Towards this clear-cut goal, the Division recently instituted the Student Learning Outcomes (SLO) for all courses that demonstrate research, analytical reasoning, applied science and technological skills for real life expectations.

The Biology Program utilizes the pre-and-post test in addition to the traditional examinations testing procedures in our assessment of Program's relationship to outcome. Commencing spring 2007 Semester, the pre-tests and post-tests were given to face to face in-class students. Similarly, a rubric has been developed for scoring each question. The pre-test and post tests are duly administered at the beginning of the semester and end of the semesters. These tests are designed to ascertain the here and now of students learning.

Describe the process by which program improvements are made, and provide evidence that this process is being followed.

The pre-tests examinations will be given at the beginning of each semester and post-test will be given at the end and student's grades will be compared and evaluated. The assessment findings will yield wealth of information and most importantly, which program remediation is needed.

Part 7: Program and Course Coverage

Describe how effectively courses in the program are covered by Full-Time and Part-Time Faculty.

The Biology Program has a full-time professor and an adjunct professor at the Palo Verde College Main Campus and an adjunct faculty member at the Needles Campus. The aforementioned effectively cover all courses by a mix of day, evening, and night classes while using face-to-face, correspondence and online modes of instruction.

Part 8: Professional Development

Describe specific professional development activities in which faculty members in the program participate, and explain how such activities benefit or enhance the program and support and facilitate student learning outcomes.

The Biology Program faculty members are involved in professional development activities by attending conferences such as the Hispanic Association for Colleges and Universities, The National Science Foundation and the American Association for the Advancement of Science respectively. Additionally, the faculty members of the Biology Program duly participate in Palo Verde College Flex Day, College seminars, and career Day activities. The knowledge gained in the aforementioned is duly transmitted to prospective students in the Biology Program, thereby enhancing their know-how.

Describe areas of unmet professional development needs among faculty in the program, if applicable, and outline plans to address those needs.

Currently, there are no areas of unmet professional development needs.

Part 9: Student Performance and Completion

Display and comment on semester-by-semester course completions in the program over the preceding 6 semesters.

Academic Year	Total Student Enrollment	Successful Completion	Number Withdrawing	Retention Rate
Spring 2007	114	88	26	77%
Fall 2007	145	116	29	80%
Spring 2008	126	87	39	69%
Fall 2008	97	73	24	75%
Spring 2009	144	117	27	81%
Fall 2009	137	106	31	77%
Spring 2010	123	97	26	78%
Fall 2010	112	83	29	74%
Spring 2011	149	119	30	79%
			Total Average	76.66%

Based on extrapolation of the above table, the Biology Program continues to contribute immensely to the overall Palo Verde College mission of exemplary learning environment that promotes student success. It is imperative to bear in mind that the average retention rate for the aforementioned years is 77%.

Part 10: Enrollment and Financial Trends

Display and comment on semester-by-semester enrollments in the program over the preceding 6 semesters.

Academic Year	Enrollment
Spring 2007	114
Fall 2007	145
Spring 2008	126
Fall 2008	97
Spring 2009	144
Fall 2009	137
Spring 2010	123
Fall 2010	112
Spring 2011	149

Based on the Grade Distribution by Institutional Division, the only conclusive inference drawn is that enrollment over the past 6 semesters plus in the Biology Program shows an upward trend. This trend is attributed to several sections of Distance Education Courses being offered, several sections offered as in Human Anatomy and Human Physiology and students' dire needs.

Display and comment on semester-by-semester expenses incurred by the program over the preceding 6 semesters, as to: supplies, contracts, capital outlay and other non-salary expenses.

2006-2007	Salaries	Benefits	Supplies	Contracts	Total
Biology	$98,020.76	$22,604.68	$945.31	$1,039.00	**$122,609.75**

2007-2008	Salaries	Benefits	Supplies	Contracts	Total
Biology	$152,814.45	$40,165.88	$1,972.39	$2,092.53	**$297,045.25**

2008-2009	Salaries	Benefits	Supplies	Contracts	Total
Biology	$163,924.20	$44,693.47	$932.47	$2,831.20	**$212,381.34**

2009-2010	Salaries	Benefits	Supplies	Contracts	Total
Biology	$113,728.20	$33,384.21	$1,332.07	$116.00	**$148,560.48**

2010-2011	Salaries	Benefits	Supplies	Contracts	Total
Biology	$102,089.50	$22,846.40	$0.00	$0.00	**$124,935.90**

Expenses incurred by the Biology Program over the preceding 6 semesters plus are appropriate for current enrollment. In terms of specificity, the aforementioned encompass field trips, mileage, and conferences.

Part 11: Facilities and Equipment

Are current facilities, such as classrooms, offices and equipment, adequate to support the program? Explain.

There is one dedicated lecture/laboratory classroom for the Biology Program. Adjoining the lecture/laboratory classroom is the faculty office. The proximity of the aforementioned allows for great access between the lecture/laboratory and the faculty office. Additionally, there are extensive specimen storage areas adjacent to the classroom.

Is available dedicated space adequate to support the program? Explain.

The available dedicated space is adequate to support the Biology Program at this time.

Is available equipment adequate to support the program? Explain.

Yes, the available equipment is adequate to support the program in terms of here and now.

Part 12: Strengths and Weaknesses

List and comment on the major strengths of the program.

The Biology Program strengths encompass:

- Broad appeal of all our courses to prospective students in terms of high number of courses offered every semester and number of sections
- The Biology Program is financially viable based on high FTE count and strong student enrollment
- The Biology Program continue to maintain very steady student enrollment
- The unconditional positive regards for students(acceptance of students for who they are and respect for them)
- Faculty academic preparedness(academic qualifications) and years of experience

List and comment on the major weaknesses of the program.

- Lack of qualified tutors in the Learning Skills Center to tutor biology students in dire need
- Insufficient coverage of online courses and face to face classes.

Part 13: Plans to Remedy Weaknesses

Identify specific steps to correct identified weaknesses and provide the timeline by which they are to be corrected.

To ensure availability of qualified tutors to teach students in the Biology Program, the Learning Skills Center is duly informed to hire students who have successfully completed higher core courses within the discipline. Hiring additional adjunct professors of Biological Sciences will be a step in the right direction in the near future.

Part 14: Plans to Advance the Program.

Describe Other Plans That Will Advance the Program

The Biology Program is dedicated to providing an exemplary learning environment that promotes students success. Toward this clear cut objective, we will continue to monitor students in Biology Courses success rate through assessment of student's skills that include: term papers, laboratory reports, student centered discussions, data analysis, problem solving ability and critical thinking skills. Biological Sciences continue to be the basic building blocks, cornerstones and integral part of the Palo Verde College Curricula. Additionally, an online introduction biology course will be taught every semester.