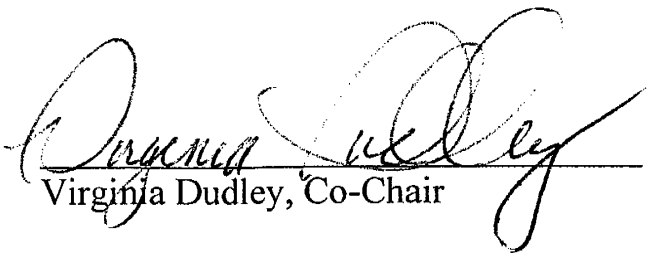
ACADEMIC PROGRAM REVIEW

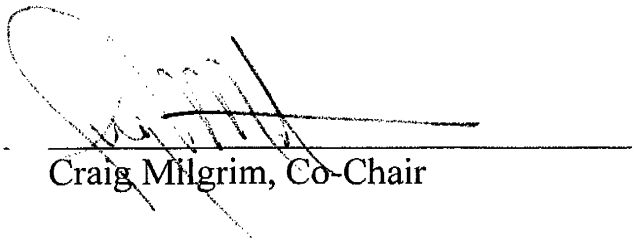
DEPARTMENT OF BIOLOGY

Grossmont College 2006-2011

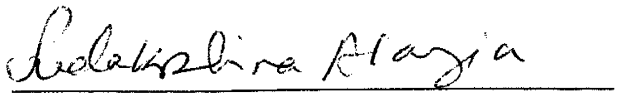
The undersigned full-time members of the Department concur with the Program Review Report as submitted in the Fall semester of 2012.



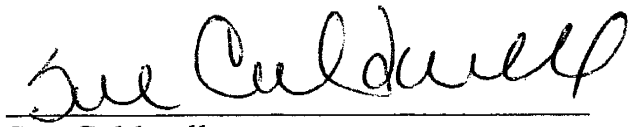
Virginia Dudley, Co-Chair



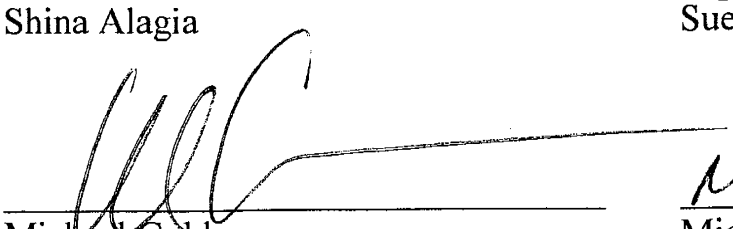
Craig Milgrim, Co-Chair



Shina Alagia

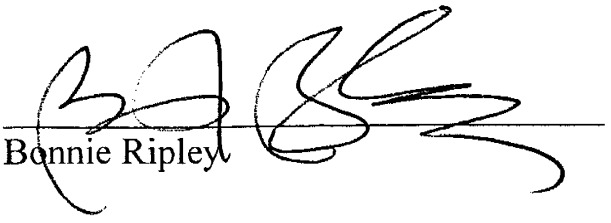


Sue Caldwell

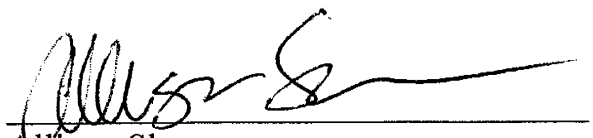


Michael Golden

Michele Perchez



Bonnie Ripley



Allison Shearer

PROGRAM REVIEW REPORT

BIOLOGY DEPARTMENT

FALL 2012

This report is written by Sue Caldwell with considerable input from faculty members and staff of the Biology Department.

BIOLOGY DEPARTMENT FACULTY MEMBERS

Full-Time Members:

Virginia Dudley, Co-Chair
Craig Milgrim, Co-Chair
Shina Alagia
Sue Caldwell
Michael Golden
Michele Perchez
Bonnie Ripley
Allison Shearer

Adjunct Members

Marit Evans-Layng
Mike Furlan
Rafael Gutierrez
John Howard
Bob Koningsor
Gail Lillis
Frank Lowe
Sidney Lynch
William McJilton
Deanna Meier
Margo Monroe
Phil Osborne
Rebecca Thompson
Gary Waayers
Clark Winchell

Full-Time Classified Lab Staff

Sharon Farley-Furlan
Susan Henderson-Deptula
Ryan Fawcett

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BIOLOGY PROGRAM REVIEW REPORT

SECTION 1: BRIEF DESCRIPTION AND HISTORY OF THE PROGRAM

1.1 Introduce the self-study with a brief department/program history.

Concise History

Since its last Program Review in 2005, the Biology Department has undergone significant changes. These include an almost complete turnover of faculty and classified staff and occupancy of a new laboratory classroom facility and expansion of course offerings. Biology continues its historical support of three areas of student endeavor: general education, transfer, and preparation for Health Science career programs. The program has changed over the years and continues to do so as the result of changing enrollment, growing demands in the health care and biotechnology fields, instructor initiatives, changing transfer requirements at CSU and UC institutions, and the Department's reevaluation of directions and trends in the field of biology. Individual courses have been continuously updated, added and eliminated as needed.

While small transitions have marked the Biology faculty and staff over the years, significant changes began in the year 2000 with the first of several retirements of long-serving faculty and technical staff members. As of the writing of this report in Spring 2012, all 13 of the full-time faculty and technical staff positions in the Biology Department have turned over. Budget restrictions have prevented the replacement of 2 of the 10 retired faculty members, reducing the number of Full-Time faculty by 20%. All 3 technical staff positions have opened due to departures or retirements with new technicians filling those positions. Since the last program review in 2005, three full-time faculty retired and were replaced. The replacement faculty with the year they joined the department are as follows: Michele Perchez and Allison Shearer, Fall 2006 and Bonnie Ripley, Fall 2007.

In addition to moving to the new Science Labs building, the department originated several new facilities. Two outdoor laboratories, a greenhouse and native plant garden, were conceived of, designed and are managed by Biology faculty. An existing lath house was renovated. All three areas are now maintained by Biology full-time faculty and technical staff. Biology has also continued to be instrumental in the maintenance and educational effectiveness of the Wildlife Sanctuary on the west side of campus.

Biology also originated and designed the Science Learning Center (SLC). Located on the first floor of the Science Lab building, this large study area is open to all

Grossmont students for group and individual work. The SLC also housed our Biology Learning Center (BLC). Students taking allied health courses in the Biology Department may check out anatomical models and have access to expert tutoring. The BLC is supervised by volunteer full-time faculty. Their duties include hiring, scheduling and supervising the BLC tutors, managing the tutor budget and maintaining our collection of bones and anatomical models used for student study.

The greatest curricular changes have been in the implementation of hard-blocked pre-requisites and an overhaul of the major's curriculum. Hard-blocked pre-requisites were already in place for the 3 majors' course offerings. The pre-requisite requirement (Bio 120 or its equivalent) for the Health Science preparation courses (Bio 140-152) was converted to a hard-block in early 2007. Pre-requisite hard blocking was done, primarily, to increase student success. Anecdotal and statistical evidence showed that students with insufficient Biology background were far less likely to succeed in Bio 140-152 resulting in many students having to repeat courses numerous times. To a lesser extent, enforcement of pre-requisites was an attempt to manage enrollment in Bio 140-152, focusing access toward better-prepared students. The reorganization of 2 of the 3 major's courses, as discussed in detail in the 2005 Program Review, was completed and implemented over a 4 year period with final implementation in Fall 2010. Working closely with the Grossmont Articulation officer, these new courses have been fully articulated with SDSU and UCSD, and with the majority of the remaining CSUs and UCs. The 3rd major's course, Bio 215, Biostatistics, underwent a complete curricular update with the arrival of a new Biostatistics full-time faculty member. The course was converted from "educational" statistics software to spreadsheet software used across the research community.

The remainder of Grossmont's biology general education courses (Biology 105, 110, 112, 114, 116, and 118) reflect the special expertise and diverse interests of several faculty members. With the exception of the more recently developed Biology 118, these courses have been a part of the program for over 25 years, but they have been formally revised several times and continue to be developed in response to changes in their respective fields. All of these courses fit a variety of transfer needs for science classes with or without laboratory components. Bio 113 was recently added to the curriculum as a specialty course for a biotechnology program (see next paragraph for full description).

In conjunction with the college's revamped planning process, the Biology department has developed a 6 year plan and yearly Department Action Plans. Through the yearly process, Biology has been able to secure funding to update computer hardware and software for laboratory exercises. In particular, timely acquisition of cadavers for Anatomy classes and new equipment and software for Physiology replacing decades old instruments.

The Biology department has continued to develop its relationship with the Biotechnology industry via partnerships with the San Diego Workforce Partnership (SDWFP) and the Southern California Biotechnology Center (SCBC). In particular, Grossmont was asked to replicate a successful summer program, The Life Science Summer Institute (LSSI), which had been running for several years at the SCBC headquarters at Miramar College. LSSI is an 8 week program for carefully selected High School students. It begins with a week-long "boot camp" course in Biotechnology techniques and culminates with a 7-week internship at a research lab (e.g., Scripps Research Institute). In conjunction with SDWFP and SCBC, the program began in Summer 2009 with the first "boot camp" offered at Grossmont College. It is expected to continue as long as state and federal funding is available.

Finally, recent budget cuts brought on by the economic downturn that began in 2008 has resulted in significant reductions in class offerings and a concomitant reduction in adjunct teaching staff. The department continues to work toward a robust day and evening program and continue to offer sections of courses needed by students to meet their educational goals.

Program Goals

1.2 Appendix 1 contains the most recent 6-YEAR Unit Plan for the program. From the 6-year Unit Plan, select your most successful and least successful goals and answer the following questions:

- ***For your most successful goal:***

a) What activities did you undertake to achieve this goal?

Increased the number and quality of human cadavers to support Anatomy and Anatomy & Physiology classes & allocated funds for ongoing replacement of skeletons, bone sets, models, and prepared histological slides which are used in various Biology lab classes.

b) Report and explain the data you have to verify progress toward your goal.
Progress is evident due to the successful acquisition of the cadavers, models and histological slides.

c) How did the achievement of this goal help move the college forward toward fulfillment of the planning priority goals in its strategic plan?

The department's 6 year plan identified 2 goals from which this Department Activity Plan item was formulated:

Department Goal #D1:
Maintain and Develop partnerships to increase the number of underrepresented groups in Biology and Pre-Health Care. Specifically, achievement of Goal D1 required academic support for incoming students. Prior studies and experiences with the Bridges program indicated that additional academic support was critical to making outreach successful. Of course, the achievement of this particular Activity goal helps all students; not just those from underrepresented groups.

Department Goal #F1:
Infuse technology (both assistive and analytical) across the Biology Lab curriculum
Applicable strategy: 6. Create a plan for cadaver replacement, a vital technology for Health Science pre-requisite courses (Bio 140, 144, 145)

Each of these goals arose out of several specific suggestions from Program Review

Allocate funds for ongoing replacement of skeletons, cadavers, bone sets, models, and prepared histological slides which are used in various biology laboratory classes. In addition, after the receipt of the Program Review suggestions (2006) and the submission of the 6 year plan (2009), the Math, Science, Exercise Science and Wellness developed a Division Goal within the still developing college planning process to support peer tutoring across the Division's Curriculum. This goal arose out of the ongoing success of the existing programs in Math, Chemistry and Biology.

The two key undertakings identified by the department to achieve the above stated goals were to:

a. Expand the Biology Learning Center which required both assistive and analytical technology in form of models, microscopes and preserved slide specimens.
b. The establishment of an ongoing cadaver replacement program to ensure the availability of cadavers for Health Science preparatory Anatomy classes (Bio 140,144, 145).

The evidence of the success of these goal is (1) the robust use of Biology Learning Center by students in Health Science preparatory courses (mainly Anatomy and Physiology) and (2) the establishment of a regular cadaver replacement program with the University of Irvine.

- ***For your least successful goal:***

a) What challenges or obstacles have you encountered?

The Department continues to struggle with dwindling resources at the State and District levels. Since the last full-time hire in Fall 2007, lack of finances have prohibited the Department filling the full-time slots which opened up following the retirement of Richard Vessel and Joe Henry. In addition, the number of sections which have been cut each semester due to budgetary constraints has resulted in a substantial cut in the number of students served, as well as a quickly-diminishing workload for Adjunct Faculty.

As a result, students wishing to enter the allied health sciences are under a great deal of pressure to finish prerequisite requirements (Anatomy, Physiology and Microbiology) in a timely manner in order to enroll in one of the two-year programs on campus or transfer to similar four year programs at SDSU or elsewhere.

b) Has this goal changed and why?

The goal, itself has not changed, but is contingent upon budgetary restraints at the state level.

Implementation of Past Program Review Recommendations.

1.3 Your program 6-year Unit Plan in Appendix 1 contains the most recent Academic Program Review Committee recommendations for the program. Describe changes that have been made in the program in response to recommendations from the last review.

The following represents a review of progress or lack thereof, made in response to recommendations from the past review.

1. Refurbish seats, boards, and basic amenities in lecture rooms used by the Biology Department. Also continue to update the Instructional Media equipment in the lecture rooms.
    a. The Biology department has minimal control over lecture rooms as they are under the purview of the VPAS.
    b. Biology currently uses six large lecture rooms: 34-150, 31-370, 36-325, 36-355, 38B-342, and 51-575.
        i. 34-150 is a brand new lecture room in the just completed Building 34
        ii. 31-370 has recently been completely remodeled. Biology participated in the planning and implementation of the remodel
        iii. 36-325 & 355 were partially remodeled with new chairs and updated AV equipment. Boards and other amenities were not. Biology participated in the planning and implementation of these partial remodels
        iv. 38B-342 is a modular classroom and has undergone no improvement.
        v. 51-575 has recently been completely remodeled.

2. Approve additional Technical support for the new Greenhouse and for the planned expansion of Health-Sciences related courses in Biology. Specifically, add a new full-time Biology Tech and a half-time Greenhouse Tech.
    a. Due to budget cut backs, the recommended additional FT tech position was frozen.
    b. With the new Lab building (occupied in Spring 2007) came two new outdoor classrooms, joining the existing two.
        i. Greenhouse (new replaced old facility)
        ii. Lath House (converted old Greenhouse)
        iii. Native Garden (new)
        iv. Wildlife Sanctuary (existing)
    c. Tech duties were re-allocated to reflect the new budget realities. The existing PT tech time was re-allocated to cover all specimen collection AND maintenance of the Greenhouse, Lath House, and Native Garden. Existing FT techs now prep all lab classes.

3. Replace the existing Lath-house with a new one, adjacent to the new Greenhouse at the south end of the new Science Lab Building. At the current location, repair and upgrade attached storage areas.
    a. Done
    b. New entry point to be completed Spring 2012. Use in classes will begin in Fall 2012.

4. Continue to improve the prompt and adequate technical support for the maintenance and operation of computers in the Department, especially Macintosh support.
    a. Biology has a single contact point for all computer technical support, which has greatly improved service and support.

5. Allocate funds for ongoing replacement of skeletons, bone sets, models, and prepared histological slides which are used in various Biology lab classes.
    a. Funds were allocated in each fiscal year for replacement and augmentation including expansion of models and materials available in the Biology Learning Center.

6. Establish, as part of our Department Technology Plan, a program of regular replacement/upgrading/improvement of computer equipment and software used in all areas particular to Biology instruction and curricular development.
    a. Maintenance and turnover of computer equipment is handled by IMS. They inform us when computers need to be replaced (based on a 5 year life span). If monies are available, then replacements are done based on available funds and unit costs. Upgrading and replacement of department computers is always part of our yearly Department Action Plans.
    b. Software upgrades are handled on a case by case basis. When upgrades are needed, if the cost less than $500.00, then Department Supply monies are used. If the cost is greater than $500.00 or also requires hardware upgrades then a specific Department Action Plan is developed. The availability of funding is always the determining factor.

7. Create a marked pedestrian crosswalk walkway along the perimeter road to the Grossmont College Wildlife Sanctuary. Repair and upgrade the access trail within the Sanctuary. Please see item 5 of the Department Educational Master Plan.
    a. This continues to be a goal of the department and has been in a part of our Department Action Plans since the inception of the new planning regimen.
    b. Michael Golden took a sabbatical in Spring 2012 to utilize $4000.00 allocated to the department through Department Action Planning process. One of the goals of the sabbatical is to use the funds to produce an updated engineering plan for this item.

8. Plan for and implement the ADA requirements for part of the Grossmont College Wildlife Sanctuary. See response to Item 7

9. Plan for and implement the ADA requirements for restrooms in and around the existing Biology area (300 West Building). ADA requirements college and district facilities are not the responsibility of the department

10. Increase the number of Department laptops from 6 to 32. Done.

11. Maintain and increase the number of full-time Biology Faculty to match our FTEF of 14.4. Includes replacing retiring faculty and the addition of 2 new full-time faculty positions.

    a. Due to budget reductions, the hiring of replacements and new faculty has been frozen.
    b. The department continues to submit requests for the oldest vacant position (due to retirement) each year.

12. Continue to purchase equipment to support the development of curriculum for biotechnology education.
    a. Partnership with the San Diego Workforce Partnership and the Southern California Biotechnology Center (begun in 2010), has resulted in significant improvements and augmentations to biotechnology equipment.
    b. In conjunction with the above partnership, a new course, Bio 113, Introduction to the Biotechnology Laboratory, was initiated in Summer 2010 (as a 299) and formally adopted in 2011. This course is part of the specialized program funded by the above partnership.

13. Upgrade all faculty computers along with providing computers for new faculty, including a choice of desktop or laptop, Mac or PC, wireless capability, and CD/DVD creation capability.
    a. Most FT faculty members have received newer computers and larger monitors via the IMS "rollover" program.
    b. The remainders are part of an ongoing Department Action Plan.

14. Add sections of heavily impacted courses: Bio 140, 141, 142, 144, 152. All these classes are prerequisites for various Health Sciences programs.
    a. Due to budget reductions, expansion of course offerings has ceased. Initial expansions of Bio 152 were cut back.
    b. The other above-mentioned courses escaped cutbacks from 2008-2011, however with anticipated cuts in the next two years, sections of 144, 145, 141 & 140 will be reduced.

15. Increase the number and quality of human cadavers to support Anatomy and Anatomy & Physiology classes.
    a. As part of the Department Action Plans, new male and female cadavers were acquired.
    b. At this time, the college is continuing to fund LEGALLY REQUIRED REPLACEMENTS.

16. Increase the allocation of travel money for Department members to attend conferences.
    a. Funding for travel has been severely curtailed. FT faculty members have not been able to attend conferences (unless they paid for the full cost themselves) since 2008.

SECTION 2 – CURRICULUM DEVELOPMENT AND ACADEMIC STANDARDS

*In **Appendix 2,** Catalog descriptions, insert copies of your catalog descriptions from the most recent college catalog (see "Courses of Instruction" section. This is the blue section). If your program has an associate degree program, include the relevant pages from the catalog (see "Associate Degree" section. This is the yellow section). [NOTE: Do not include your actual course outlines]*

2.1 Review your course outlines and explain how these outlines reflect currency in the field and relevance to student needs, as well as current teaching practices.

All biology course outlines have been reviewed and rewritten to conform to the detailed guidelines regarding "writing, reading, problem-solving skills, quantitative reasoning and critical thinking," which have been required by the Curriculum Committee for a number of years now. All course outlines on file have been approved by that committee, certifying compliance. During Spring 2006 and Spring 2007 the Curriculum committee evaluated the package of biology course outlines. During 2007-2008, our majors' package (Bio 210-211-212-220-221) was converted into two new sections, Bio 230 and Bio 240, the creation of which strengthens its alignment and maintains transferability of these courses. All course outlines have been reviewed by biology faculty members, updated to conform to Program Review and Title III mandates, and submitted for approval by the Curriculum Committee.

2.2 What orientation do you give to new faculty (both full- and part-time) regarding curricular expectations (i.e. SLOs and teaching to course outlines), academic standards, and department practices? How do you maintain an ongoing dialogue regarding these areas? You are encouraged to use feedback from your Faculty Survey discussion.

The Biology Department emphasizes its high academic standards during the interview process for new members, and attempts to select individuals who are committed to similar standards. An abiding collegial environment in the Department sustains professional respect among members and encourages discussion of academic issues such as standards and integrity. Without exception, instructors publish course syllabi which include specific descriptions of the course standards for students. In anticipation of the upcoming accreditation process, the Department is also considering including Student Learning Outcome (SLO) objectives in the syllabi published for courses such as Bio 110 or 120, which are general education science courses with lab components.

It is the policy of the Biology Department that official course outlines are written and periodically reviewed by all full-time members of the Department who actually teach each course. This collaborative effort ensures that the outlines accurately describe the presentation of courses by our faculty members.

In addition, we also have a full-time faculty member as the course coordinator for each multi-section course who is responsible for reviewing syllabi of adjuncts to make sure they are adhering to the course outline. Every semester during flex week the course coordinators meet in a break-out session with these adjuncts to mutually resolve any issues and stay connected. Adjuncts are given a copy of the course outline and syllabus which they may use as an aid to develop their own documents.

Adjunct instructors are most often employed for multi-section courses with labs. For these courses (Biology 110, 120, 116, 144, 145, 152), lab schedules are set by the Department, and the laboratory exercises are standardized over all sections, using the same technical set-ups and the same laboratory manual. Whenever possible, the Department also encourages use of the same textbook for these multi-section courses taught by different instructors.

Since the Biology Department offers several courses that meet a variety of student needs, each must be evaluated using different standards. With the help of the Curriculum and General Education Committees, along with the Counseling Department's liaisons and vigilant attention to our agreements with CSU and UC, transfer courses for both general education and majors' preparation are kept current. The Department continues to consult with coordinators of vocational and high school outreach programs in order to better serve these important student constituencies. A Tech Prep program (*Health and Science Pipeline Initiative*) to help high school students better prepare for college-level biology work toward allied health careers is currently being examined.

2.3 Give some examples of how your department members keep their instruction (i.e. delivery, content, materials, syllabus) current and relevant to student academic and/or career needs.

Department members continue to be actively involved with Biotechnology Education through membership in the Southern California Biotechnology Education Consortium. Resources from this institution have helped to expand Biotech education in our majors' courses.

In addition, every faculty member pursues ongoing education through flex week courses in new teaching technologies, as well as pursues outside educational opportunities in order to maintain current in both educational and subject-specific fields. Craig Milgrim subscribes to and reads "Science." He also attended a conference entitled, "Epigenetics" which was conducted by the Southern California Biotech Consortium. Bonnie Ripley subscribes to and reads a weekly bulletin of "Science-in-the-news" from Sigma Xi. She also regularly reads Tech Review and American Scientist. Shina Alagia attended a conference entitled, "Visualizing Future for Anatomy, Physiology & Microbiology" presented by Wiley, the publisher of the text she uses for her Anatomy & Physiology classes. Michele Perchez attended a conference for undergraduate educators hosted by the American Society for Microbiology.

Each faculty member regularly updates lectures with new information when it appears in new editions of our textbooks, or if we are aware of even newer research in the topic. Items of interest are often disseminated to the other faculty by means of inter-departmental e-mail.

2.4 Analyze the data in Appendix 3 - Grade Distribution Summary. Identify and explain any unusual retention patterns and grade variances. (To figure retention percentages, subtract the "W's" from the total enrollment and divide that number by the total enrollment).

Over the period between Fall 2005 and Spring 2011, the Biology Department's student retention averaged 78.7%--slightly higher than the 76.3% reported in the previous program review. As far as individual courses are concerned, the data in Appendix 3 ranged from a low of 67.6% in Biology 144 (Human Anatomy and Physiology I) to a high of 89.2% in Biology 145 (Human Anatomy and Physiology II). This indicates that students who persevered through the first semester of Human Anatomy and Physiology I were well-prepared, and well-aware of the academic expectations for the second semester. The retention data for the other preparation for allied health sciences courses (Bio 140 – Human Anatomy, Bio 141- Human Physiology Lecture, Bio 142 – Human Physiology Lab, and Bio 152 – Microbiology) reflected the departmental retention average. General education biology classes retained a higher percentage of students (Bio 110 – 87.2%) than the departmental average.

Examination of **Appendix 3**, "Grade Distribution Summary," does not reveal any general tendency of either full-time or adjunct biology faculty members to give a higher percentage of "A" grades. It is recognized, however, that the variation among grade distributions may not necessarily be due to instructor grading standards, but rather may be often due to any of several factors related to the nonrandom distribution among course sections of talents, preparations, and levels of commitment among the registered students in multi-section courses.

2.5 Describe strategies employed to ensure consistency in grading in multiple section courses and across semesters (e.g., mastery level assessment, writing rubrics, and departmental determination of core areas which must be taught.).

The Biology Department has no formal strategies to this end. However, grade distribution summaries are made available to all members of the Department, so that they can consider whether to adjust their patterns of grading in the interest of consistency. Multi-section labs use the same manual that includes SLOs that are common to all sections. The collegiality of the Department and its expressed emphasis on high academic standards has been more than sufficient to assure a level of rigor within multi-section courses which satisfies the tenured biology faculty members. All full-time faculty members within the Department have proposed SLOs (Student Learning Outcome) objectives and standardized grading rubrics in the syllabi.

2.6 Describe and give rationale for any new courses or programs you are developing or have developed since the last program review.

As previously-mentioned, during 2007-2008, our majors' package (Bio 210-211-212-220-221) was converted into two new sections, Bio 230 and Bio 240, the creation of which strengthen its alignment and maintain transferability of these courses. In addition, the department has developed online hybrid sections of Bio 118, Bio 141 and Bio 144 in order to meet the growing public need for online classes.

2.7 How are current issues (environmental, societal, ethical, political, technological) been reflected in your curriculum?

Nearly every faculty member participated in some way with the "Henrietta Lacks" multi-disciplinary project set forth in 2011. Some had students construct poster projects, read "The Immortal Life of Henrietta Lacks," or include a discussion of this topic as a portion of lecture and/or homework assignments.

Instructors regularly discuss science-in-the-news topics during lectures. In addition, most courses include a project that emphasizes current issues. Virginia Dudley requires that her Life in the Sea (Bio 105) students write a final essay on biological magnification. Shina Alagia has students create pamphlets on various diseases in her Anatomy and Physiology classes. Sue Caldwell assigns a term paper for her Human Biology (Bio 118) classes. Students must select a subject from a predetermined list. Following the BP Gulf Oil spill several instructors, including Bonnie Ripley used the opportunity to discuss the biological ramifications of this disaster in class. Craig Milgrim discusses Bioethics in Bio 230, and Allison Shearer shares current issues and clinical applications in Human Anatomy (Bio 140). An entire course, Bio 112 (Contemporary Issues and Environmental Resources) is dedicated to current issues.

2.8 If applicable, provide a comparison of the retention and success rates of distance learning sections (including hybrid) and face-to-face section. Is there anything in the data that would prompt your department to make changes? (Please see instruction for help on finding the applicable data.)

The Department currently offers three hybrid online classes: Bio 118 (Human Biology), Bio 141 (Human Physiology) and Bio 144 (Human Anatomy and Physiology I). The retention rate of students in Bio 118 hybrid is similar to that of the Bio 118 face-to-face class; however, the success rate of students in the hybrid class is on the average lower (77.4%) than that of the face-to-face class (84.9%). This may be due to unrealistic expectations of students taking the hybrid class, or in this case may be due to the fact that different instructors teach the hybrid and face-to-face sections. It should be also noted that the success rate in this hybrid class rose from 70.5% in Spring 2009 when it was first offered to 85.7% in the last reported semester, Fall 2010.

A better comparison can be made of the other two hybrid vs. face-to-face classes that are taught by the same instructor. The retention rates in the online Human Physiology class were slightly higher (86.2% vs. 82.3%) than those of the face-to-face classes, however the success rate was lower in the online class than that of the face-to-face classes (88% vs. 97.4%. This is probably due to the unanticipated rigor and need for independent study in the students taking the online section. The Anatomy and Physiology I online hybrid classes initially reported a lower retention rate than the face-to-face classes (61.1% vs. 93.5%) during Fall 2010, the first semester that it was offered, however, in subsequent semesters the retention numbers were comparable. In addition, there is practically no difference in average success rates between the hybrid and face-to-face classes.

Because the department has determined that hybrid/online classes maintain the same degree of academic rigor as face-to-face classes, the department has elected not to make changes in the way the courses are offered.

2.9 If applicable, include the list of courses that have been formally articulated with the high schools. Describe any articulation and/or collaboration efforts with K-12 school. (Contact the Career and Technical Education Partnership and Tech Prep office for help.)

There is limited articulation between the Biology Department and high school courses. Following is the list of courses that somehow articulate with a few of the courses offered by the Biology department.

- AP Biology with a grade of 3 or higher is equivalent to Biology 120.

There is some level of participation in "Middle College" program offered by the Grossmont College for High School students. This allows advanced high school students to participate in some of the courses offered by the Biology Department. Progress reports are submitted mid-semester by faculty members who have these students enrolled in their classes.

2.10 Consult with the articulation officer and review both ASSIST.org and the Grossmont College articulation website. Please identify if there are any areas of concern or additional needs your department has about articulation with four-year institutions. Please describe how the program ensures that articulations with key four-year universities are current.

At this time all majors classes fully articulate with lower-division majors classes at both Cal State and UC systems. In addition, many of the General Education classes also articulate with these systems. The Department co-chairs have been diligent in making sure that articulation between Grossmont Biology courses and these four-year institutions is up-to-date.

SECTION 3 – OUTCOME ASSESSMENT

3.1 What is working well in your current SLO assessment process, and how do you know? What needs improvement and why?

At this time all SLOs are current in their 6 year review cycle. The SLO assessment for all classes under the "older" assessment template was completed by the course coordinators, who are all full-time faculty. Adjunct instructors do not complete SLO assessments, since they are not compensated for this task.

The SLO assessments will be improved as they are analyzed in their 6 year cycles by using the newest SLO assessment template provided by Devon Atchison. As of now two courses, Bio 105 and Bio 144 have assessed SLOs using this template that reports more data than the previous assessments. For these two classes the previous average success rate using the current template was over 50% (Bio 105 has assessed one CSLO, Bio 144 has assessed three CSLOs). The current action plan for both of these classes is to continue normal assessment cycles with no changes to the SLO or the assessment tool.

As SLOs are assessed in the next 6-year cycle (through 2015) the instructors will glean more statistical data for their individual SLOs rather than give a general overview of success vs. lack thereof. As more specific data are available, the Biology Department will recommend action plans for improvement of SLO assessments as necessary. This will be addressed in the next program review.

3.2 Using your course-level SLO Assessment Analyses (Appendix 5), this is part of your annual reporting process, and your Course-to-Program SLO Mapping Document (Appendix 6), discuss your students' success at meeting your Program SLOs.

Many of Biology's courses are quite narrow in their foci; therefore it would be impractical for them to assess all PSLOs in each class. For example, the "Modern Systematic Principles across Species" PSLOs would not be appropriate for courses in Human Anatomy (Bio140). Human Physiology (Bio 141 & 142) or the combined Human Anatomy and Physiology courses (Bio 144 & 145). However, all of the department's courses do address at least one PSLO in their CSLOs.

Of the 15 separate courses offered by the department, seven courses match three CSLOs to the PSLOs (Bio 112, 118, 120, 140, 141, 142, and 144). Three offered courses have CSLOs that match two PSLOs (Bio 113, 230, 240). Three offered courses match one PSLO (Bio 105, 110, 145) in their CSLOs. Finally, Bio 215 matches four CSLOs to PSLOs.

3.3 Based on your discussion in Section 3.2, are there any program SLOs that are not adequately being assessed by your course-level SLOs? If so, please indicate by clearly designated modifications to your Course-to-Program SLO Mapping document in Appendix 6. Please discuss any planned modifications (i.e. curricular or other) to the program itself as a result of these various assessment analyses.

Currently the Biology Department is satisfied with its current CSLOs and PSLOs in place and does not plan any modifications. Courses that satisfy GE requirements, program, and major criteria all assess at least one of the PSLOs per course, as appropriate to the specific course topic. A student that matriculates through the program as a Biology major will have been exposed to all PSLOs set forth by the Biology Department.

SECTION 4 – STUDENT ACCESS

4.1 How does facility availability affect access to your program?

Since moving into the new Science Lab Building at the beginning of Spring 2007, our facilities have generally not limited access to the program. The six labs rooms in the new Science Lab Building (30) accommodate between 32-36 students per section. Each room is ADA compliant. Lecture facilities are adequate and all now contain Smart Carts with computers, media output and projectors. All technology is ADA compliant. A separate room to house live animals, a dissection room for cadavers; a clean-up room, experiment room and staff conference room were also included in the new laboratory building, providing the faculty and staff with adequate work/teaching/clean-up space.

Room 30-138, the microbiology laboratory, houses a variety of highly technical, specialized equipment, and has stringent requirements for sterility measures due to the use of pathogenic microorganisms. The room is specially configured with high benches to limit accidental spillage, gas lines for "flame" sterilization, "red bag" and other hazardous waste disposal containers, incubators for culturing microorganisms, dedicated refrigerators and other equipment which should be used only under strict supervision. The lab is therefore limited to use by microbiology students, instructors, and the Microbiology Technician.

The new greenhouse and native garden have provided additional access and teaching venues for General Biology (Bio 120) and Environmental Biology (Bio 110). The native plant garden in particular allows students who are in wheelchairs to view many of the plants that more mobile students have a chance to observe on a hike in the Nature Preserve.

Additional study and tutoring time for students is now available in a large common use room host open-access time that Anatomy and Physiology students may study with the anatomical models and receive help in preparation for lab practical exams. Offices for full-time faculty members are adequate in the new Sciences Laboratory Building (30). Adjunct instructors have access to computers and desks in some of the larger offices, and can use these rooms for conducting office hours.

Access to classes continues to be limited due to limitations on staffing rather than facilities available. The current number of sections offered of most classes is inadequate to fulfill the demand for classes by students. Many classes (which enroll 32-36 students) in the last three years have had full waiting lists, and additional "crashers" on the first day of class.

4.2 *Discuss what your program has done to address any availability concerns (i.e. alternative delivery methods, alternative scheduling sessions, off-site offerings).*

Our curriculum has historically offered the most popular classes on Saturdays and evenings as well as during week day time slots. Since the campus is now closed on Saturdays, these sections have been eliminated, but we continue to offer evening sections of a variety of course offerings to accommodate the schedules of students who work during the day.

Online offerings now include three classes. Two instructors have taken the initiative to teach hybrid on-line biology classes, without a laboratory. Shina Alagia was the first faculty member to develop the hybrid Bio 144 (Anatomy and Physiology I). Given the very nature of biology, which usually requires lab experiences for observation and proper understanding of complex processes, the inclusion of an online lab does not adequately replace conventional teaching in the lab. Professor Alagia therefore presents the lecture material in an online environment, but students must take the lab portion and any exams on campus. The same is true of the hybrid online section of Bio 141 (Human Physiology Lecture) that is offered one semester during the school year. The online portion is lecture only, and students must be on campus for class orientation as well as to take the 4 exams during the semester. One additional course is offered online, Bio 118 (Human Biology-Caldwell), which is a general education course with lecture only. As with Bio 141, students of this hybrid online class receive lectures via audio podcasts through Blackboard, but must be on campus for orientation as well as to take the 4 semester exams.

Relocation of biology lab classes to other sites has not been considered, mainly due to the fact that the limiting factor for enrollment size is sections available, not facilities issues.

4.3 Based on your analysis of the Student Survey results in Appendix 7, what trends did you observe that might affect student access (i.e., course offerings, communication, department and course resources)?

The rigor of the data for the Student Survey is questionable, since only 17.3% of the students responded. The only question from the survey that is relevant to this question is 14, relating to the availability of courses in the department. Only 35% of respondents were "Very Satisfied" or "Satisfied".

4.4 What implications do these findings from 4.3 have for your program?

This result is not surprising, since budget cuts over the last three years have resulted in a marked decrease in our section offerings and places for students in our classes. As soon as we are able to do so, we will increase section offerings again.

4.5 Based on your analysis of questions 3 through 16 in the Appendix 7 - Student Survey, identify any changes or improvements you are planning to make in curriculum or instruction.

Student responses to most of these questions generally fit predictable patterns and do not require attention. However, the result that only 20% of respondents turn to their textbooks for help in their class is troubling. In the sciences, the textbook should be the first place students turn. We believe there are several factors contributing to this result: 1) the prohibitive cost of textbooks, so students don't even have them; 2) students lack the skills and discipline to read at the necessary level, so even if they try reading the text it doesn't help them; 3) a bias among students to go first to the internet to search for information, rather than use their book. We plan to discuss various strategies of improving the level of student textbook use at future department meetings, and to implement as many of these ideas as we can.

4.6 Discuss program strategies and/or activities that have been, can be, or will be used to promote/publicize the courses/program. Comment on the effectiveness of these strategies in light of the results of the Student Survey (Appendix 7)

Biology courses are advertised primarily through the general catalog. It is updated on a yearly basis and becomes available to students and the general public prior to the beginning of the academic year. In the catalog, course content is described, along with the total units for the course and any prerequisites, co-requisites or other recommended preparation for the course. In addition, notations are included with each course description indicating transferability to the CSU and UC systems. According to the results of student surveys provided in **Appendix 7**, the majority of biology students learned about the courses from college catalog followed by the Counseling Department and Grossmont College Web site. So, all in all, the college catalog remains an efficient means for attracting students at this time.

Two additional flyers are available. The less formal of the two "maps" the courses students should take depending upon whether they have selected one of three common tracks: preparation for the biology major, preparation for health science programs, or general education options in biology. The second brochure is similar in design to the many others prepared on campus to describe various programs. It describes the Biological Sciences program at Grossmont College, outlines the general education, majors' sequence, and pre-professional courses offered. A list of full-time faculty members is included, along with the courses they teach, as well as general information about the college. The brochure is suitable for distribution off campus or on campus: it is displayed on the wall of the first floor, Building 30, and is also available in the Counseling Center.

A growing number of students or potential students are accessing the Grossmont College Web site. With catalog and class schedule information now available, as well as a growing number of faculty Web pages, this resource will be of increasing value for departmental publicity as more citizens make use of the medium in the coming years.

The Biology Department does not have any formal recruitment program for high school students or postsecondary school students. Members of the Department agree that our time is better spent working on instructional innovations, developing the biology curriculum and pressing for improvements to our facilities. We have consistently relied on general college publicity and the extensive outreach program conducted by the Counseling Department to help attract students from high schools.

4.7 Explain the rationale for offering course sections that are historically under-enrolled. Discuss any strategies that were used to increase enrollment.

The only class that has been historically under-enrolled is Bio 215 – Statistics for Life Sciences (Average students over the past 14 semesters = 12.7). Enrollment of the class is limited to 15 students because students need to use the departmental laptop cart for weekly activities, and the cart contains 15 computers. However, since this is a prerequisite class for the majors program, at GC as well as the colleges to which it articulates, it has been deemed appropriate to continue to offer this class despite its small size. In response to the historic under-enrollment, the class is only offered once a year, rather than every semester as it was prior to the 08/09 academic year.

4.8 Based on an analysis and a review of your 6-year Unit Plan (Appendix 1), what specific strategies were utilized to address <u>access</u> issues of special populations (e.g. ethnicity, age, and gender).

The following department goals relate to this topic. Each one is briefly discussed in list form:

a. Community Outreach/Response Goal D1 AND Student Success and Support Goal E1: Continued coordination of the Bridges to the Future program in conjunction with SDSU/NIH. This served to expand recruitment of students into the program by expanding faculty, counseling staff and EOPS staff involvement. In addition, the department participated in the American Recovery and Reinvestment Act including collaborations with the San Diego Workforce Partnership and Scripps Research Institute which involved guest speakers addressing graduate school issues and employment opportunities.
b. Student Success and Support Goal E2: The Biotechnology summer program has been offered for the past two summers and we expect to offer it again this summer. Many of the student participants are from underrepresented groups in STEM areas.
c. Department/Unit Resources and Development Goal F1: Technology has been introduced into lab classes with the acquisition of two sets of 16 PC laptops and printers, as well as the replacement of the outdated PowerLab Physiology equipment with the new BioPac Physiology equipment.
d. Department/Unit Resources and Development Goal F2: Ongoing maintenance and improvements to the Coastal Sage Scrub Biological Reserve and especially the Native Plant Garden have literally improved physical access for students. Plants may be viewed in the Garden by students who use wheelchairs or are otherwise limited in their mobility.

SECTION 5 – STUDENT SUCCESS

5.1 Building on your answer to question 4.8, what specific strategies were utilized to maximize success issues of special populations (e.g. ethnicity, age, and gender).

Especially important in this regard was the interpersonal work of the faculty and staff with individuals in special populations. Faculty such as Allison Shearer devoted large amounts of office hour time to small group tutoring. Students throughout the department were given assignments that required they utilize library research tools and develop a good command of the English language in writing. In addition, aforementioned guest speakers from the San Diego Workforce Partnership and Scripps Research Institute mentored special populations to help them know what would be required in the workplace, and therefore the importance of achieving success in the classroom.

5.2 Describe specific examples of departmental or individual efforts, including instructional innovations and/or special projects aimed at encouraging students to become actively engaged in the learning process inside and outside of the formal classroom.

The Biology Department currently has all full-time and several part-time instructors that regularly use Blackboard and other technology as part of instructional process, assessment and classroom interaction. Certain instructors for Bio 120, Bio 144, Bio 145 and Bio 220 (Craig Milgrim, Shina Alagia) have developed class websites that are regularly maintained by the instructors. These websites as well as the Blackboard environment are accessible by the students who can download lectures, access grades, download homework assignments and also can use them to gather extra information on various topics discussed in the classroom. These websites also have links to various animations, 3-D interactive programs and learning activities that are available on the internet that can be conveniently accessed by the student to be used as visual tools to aid in the process of learning concepts. Bio 142 includes instruction on computers for physiological data acquisition via BioPac hardware, as well as for data reduction, presentation and statistical analysis as part of its laboratory investigations and reports.

Technical laboratory equipment such as spectrophotometers and pH meters are used at one time or another in all of the Biology lab courses. Some of our instruments have the more recent digital data readout, and a few can interface with our computers, allowing students a hint of the level of technology to be found in typical research and commercial laboratories.

Two sets of laptop computers (16 each) are routinely used by students in all of the Biology instructional laboratories. Specialized biotechnology equipment and techniques are used in Biology 230, which also routinely uses laboratory computers for analysis of data obtained. Most of the laboratory exercises of Biology 215 (Statistics for Life Sciences) use the laptop PC's for data organization, presentation and statistical analysis. All of these computers are available for demonstrations of Internet research techniques in other classes held in those rooms.

Anatomy lab students utilize a histology CD-ROM to help study tissue slides and the *A.D.A.M.* interactive gross anatomy study program to supplement cat dissections and anatomical models. Physiology lab students use the BioPac Lab system, with its software on the PC computers, to obtain and present data such as electrocardiograms and electromyograms from human subjects. Both physiology and statistics lab students use one or two of the *StatView, JmpIn, AppleWorks*, and *Microsoft Excel* application programs to analyze and present data such as animal metabolic rates. More and more, both anatomy and physiology students have been bringing their own copies of ancillary study aids on commercial CD-ROMs into the Biology Learning Center.

Video players and monitors are also used in all Biology labs, mostly for presentation of commercially available instructional videos. Instructors regularly use a video camera with monitor displays during dissection demonstrations in Biology 140, 144 and 145 classes. Sue Caldwell has prepared MP3 audio podcasts of all lectures for Bio 118 and 141 which are available to her students as podcasts to download through Blackboard.

Nearly all Biology courses require students to choose a topic (often from a list provided by the instructor), research it using a combination of print and online materials, and present it either to the class, or to the instructor, in the form of a Power Point or other type of oral presentation, a paper, poster/brochure, or some combination thereof. The students, as a result, become the experts in their subject matter so a lot of good retention learning occurs.

Biology 152 (Microbiology) students utilize "open lab hours" during which they practice and refine hands-on lab skills/techniques in an independent setting (during Spring 2011, for the first time ever, some peer tutoring coverage was introduced with great success). In addition, their three, graded "unknown" lab sample assignments are completed solely during open lab hours. There is no doubt that these students are actively engaged in learning both inside and outside of the classroom. Michael Golden and Michele Perchez have spoken in person or via email to science students about the Bridges to the Future program to increase their awareness about future career paths and opportunities.

5.3 Explain how the program collaborates with other campus programs (e.g. interdisciplinary course offerings, learning communities, community events, tournaments, competitions and fairs) to enhance student learning inside and outside of the formal classroom.

The Biology Department values a professional and amicable relationship with other departments on campus. Members of the Biology Department communicate on a daily basis with other departments such as Chemistry, Counseling, English and Math, as well as the library staff. Chemistry is a pre-requisite for Biology 144 and English 110 and Math 90 are recommended preparations for all Biology classes.

Several faculty members (Perchez, 2009; Ripley and Shearer, 2011) have attended the newly introduced Grossmont College Summer Institute workshops, which helps to facilitate learning campus communities via meeting, interacting and collaborating with faculty members from other departments on campus.

The Biology Department participated in the year-long, campus-wide Henrietta Lacks Project (Summer 2011-Spring 2012). Several Biology faculty members and staff helped to organize and staff the laboratory demonstration of purchased HeLa cells for an organized one-day, campus-wide event (Fall 2011), and developed several posters for display during the event. Ripley judged the debate component of the one-day event.

Perchez organized and staffed a microbial life laboratory demonstration for the 1st Annual Grossmont College Science Festival, and Ripley was a guest speaker for the same event (Fall 2010).

Shearer was a speaker in Sue Jensen's and Joan Ahren's English 110 courses. She discussed cell culture and immunological topics, as well as gave the allied health student cohort a realistic view of the expectations and rigors of the core courses that will be in their near future.

5.4 Based on an analysis of "Reports" data (This is found on the intranet under "Reports"), discuss trends in success rates, enrollments and retention, and explain these trends (e.g. campus conditions, department practices). Provide examples of any changes you made to address these trends.

Discussion of enrollment trends for the Biology Department according to overall enrollment, enrollment by gender, enrollment by age, and enrollment by ethnicity data. The data analyzed were from Summer and Fall 2006, and the academic calendar years 2006-2007 through 2010-2011 including summers therein. When mentioned, the duplicated raw data, as defined by the District's Research, Planning and Institutional Effectiveness department (who provided the data tables and graphs) represents seat count, while the non-duplicated raw data represents distinct student headcount. Most of the trends discussed are based on the percentage data reported.

Fall Semester data 2006-2011 trends and discussion

In terms of the overall enrollment data for the department, for the duplicated data, there was slight decrease from about 2000 to 1800 students during the Program Review study period. There was a slight increase during the calendar year 2006-2007. The same pattern was true for the unduplicated data, but with less of a decrease from beginning of the study period to the end (about 100 students). The sharpest decreases over the study period for both data sets were over the last two years (2009-2011). These data reflect the past two years of declining enrollment occurring campus-wide due to forced section cuts imposed by the dire California budget situation. In terms of changes we have made to address declining enrollment, we have consistently had departmental discussions to reach consensus on which courses to cut and when. We have planned for the multiple scenarios that the district informs of ("bad, really bad, devastating"). We have approached the cutting of course sections by together prioritizing sections based on low enrollment, trying to preserve our nighttime course offerings, maintaining our high demand general biology sections as much as we can, while trying to offer a diversity of courses overall. The holistic approach we take as a department makes us feel we have done the best possible work for our students during this fiscally stressful time.

As far as the gender data go, there were not many changes over the study period. About two-thirds of our students were female, while about one-third were males. The biggest difference was for Fall 2011, where females were at about 64%, and males about 35% (1% not reporting). There were not significant differences in duplicated versus unduplicated data. There was an increasing trend over the study period to choose not to report gender. It is interesting to note that during the majority of the entire Program Review study period (Fall 2005-Spring 2011), the patterns of full-time faculty mirrored the same ratios as our students: about two-thirds female and one-third male! Only in the last year of that study period did the ratio get skewed to about 85% female and 15% male. Our inability to hire two new replacement faculty because of budget reductions could explain this, as the two full-time faculty that retired were men.

For the age data, we noted consistent patterns that our courses were dominated by students aged 24 years or younger (about 70-80%), with a slight increase up to the year 2007, then decreases from 2007 to 2011. The next two age categories that were pretty evenly matched were 25-29 years and 30-49 years (about 14-16% each), and they fluctuated up and down consistently with no overall trend of increasing or decreasing during the study period. The 50+ age category stayed pretty flat (about 1-2%) except for decreasing during the year 2010 only. There were not significant differences in duplicated versus unduplicated data. These data consistently matched campus trends of the past showing that our campus is dominated by younger students. We have begun and are continuing discussions about the increasing anecdotal evidence of the lack of preparation of a lot of our students. Perhaps the trends we observe as of late are influenced by the fact that the majority of our students are younger. This fact may underlie their apparent inexperience in realistically comprehending, and handling the workload that is being required of them in our courses.

Lastly, for the overall enrollment by ethnicity data, there were four distinct groups: Whites (about 43-50%), Hispanics (about 17-24%), a cluster of Blacks and Asians and Filipinos (about 6-7% each), and a cluster of Pacific Islanders and Native Americans and those identifying as more than one ethnicity (about 1% for the former two, about 3-6% for the latter). The patterns over the study period were: Whites decreased, Hispanics increased, Blacks increased slightly, Asians and Filipinos both decreased slightly, Pacific Islanders increased slightly, Native Americans decreased slightly, and students identifying as more than one ethnicity nearly doubled during the study period. The changing demographics of our college community over the study period reflect the changing demographics of our community at large. This was especially noted in the decrease of Whites, increase of Hispanics and the increase of those identifying as more than one ethnicity.

Spring Semester data 2006-2011 trends and discussion

As far as the overall enrollment data for the Spring semesters, there was a much more dramatic decrease for the duplicated data within the study period, going from about 2300 to 1800 students. This was a sharper downward trajectory compared to the same data for Fall. However, the difference was far more subtle when the Spring unduplicated data was examined (going from about 1850 to 1700 students). It was interesting to note that when we compared the overall enrollment data grouped by academic calendar year (ex. Fall 2006 and Spring 2007, etc.) for most years the Spring enrollment was higher than the Fall, with the exception of Fall 2009-Spring 2010 and Fall 2010-Spring 2011. It is a consistent trend that Spring enrollment is higher due to students enrolling in more classes to finish up and transfer. The reversal of this trend during those two noted years could be easily explained, once again, by those years being the time of reduction in course offerings *(see discussion under Fall data above).*

The gender data for the Spring semesters showed roughly the same as the Fall trends. Females constituted about two-thirds of our students, while males constituted about one-third, with a small percentage not reporting (same increasing trend in the latter over time as seen in Fall). The same pattern of decreasing enrollment numbers was observed during the 2006-2011 study period. See the previous discussion under Fall for our interpretation of the trends.

For the age data, Spring showed the same general trends as the Fall data, where about 70% of our population were students 24 years and under, the two categories of 25-29 years and 30-49 years were very similar (about 13-16%) although numbers for the 25-29 years were slightly higher than 30-49 years. The 50+ group stayed about the same as Fall (about 1-2%) with notable doubling in Spring 2009. *(See Fall data for discussion of age data trends.)*

Lastly, in the overall enrollment by ethnicity data, we noted roughly the same pattern that we did for Fall--we had four groups that were distinct. Whites were at about 45-50% and decreasing over the study period, while Hispanics were at about 17-23% and increasing over the study period. Blacks, Asians, and Filipinos formed a third group, and each constituted about 6-8% each. Blacks and Asians were decreasing slightly in numbers during the study period, while Filipinos increased slightly. The fourth group, based on the data, consisted of Pacific Islanders (about 1% to slightly higher), Native American (about less than 1%), and those identifying as more than one ethnicity (about 1% and slightly higher than 4%). The trend for Pacific Islanders was a slight decrease, and the same for Native Americans with a lot more fluctuation from year-to-year, and there were dramatic increases for the more than one ethnicity category (almost tripled!). *(See Fall data for discussion of age data trends.)*

Summer data 2006-2011 trends and discussion

In relation to the overall enrollment data for Summer, there was the greatest reduction from years 2009 to 2011 with an over decrease of about three-quarters. Half of that reduction occurred from the years 2009 and 2010. See previous discussions on overall enrollment data for the explanation of this trend.

For the gender data, the gender differences were even more dramatic than normal with about three-quarters of students identifying as female for most summers, with two exceptions. In Summer 2010, the ratio of females to males resumed the usual academic year distribution of about 65 to 34. Summer 2011 saw the ratio was roughly equal (about 50:50). During the study period, about 3-6% did not report gender which was slightly higher than that noted for the regular academic year.

With the age data, we still saw the dominance of the younger age categories (about 60-70% for those 24 years and under), although summer 2009 showed the fewest in this category over the entire study data set (less than 60%). Both 25-29 years and 30-49 years increased during the study period with about 20% and 22% respectively, which is slightly higher than the regular academic year. The 50+ category was up slightly from the regular academic year (ranging from about 1.5 to almost 3%).

Lastly, in the overall enrollment by ethnicity data, we noted roughly the same pattern that we did for the regular academic year --we had four groups that were distinct. Whites were at about 40% (decreased from the regular academic year, and with a decreasing trend over the study period). Hispanics were the same percent as the regular academic year, but showed an increase over the study period. The third group, which consisted of Blacks, Asians, and Filipinos, showed some differences compared to the regular academic year. Most notable was a significant increase in the number of Blacks in our summer enrollment (up to about double in some cases). Asians and Filipinos did not show any differences from previous data sets, but Asians did increase over the period, while Filipinos showed fluctuation without a general trend. The Pacific Islanders, Native Americans, and students identifying as more than one ethnicity cluster group did not show any differences from previous data sets.

The overall patterns of the summer data indicated that they do deviate from the regular academic calendar year. In the study period, there were more females, the students were older, and there was more diversity (Whites decreased while other categories increased). It is pretty typical to have different students attending our college during summer--some from the other local colleges, some from other states but visiting with family over the summer, and some who get more free time to take classes during the summer.

Discussion of success rates for the Biology Department according to gender, ethnicity (both overall and class-by-class), and distance education data. The data analyzed were from the academic years 2005-2006 through 2010-2011. The trends discussed are based on the percentage data reported. Overall enrollment count was provided as well so will be discussed also. First, data trends for all categories will be discussed, followed by strategies used by our department to increase success rates. Please note: due to the fact that our department did not compile the data, it is unknown whether the summer proceeding the given academic year was added to that years analysis, or whether the summer following that academic year was added instead.

Overall Enrollment and comparing gender enrollment trends

Overall enrollment did fluctuate over the study period, but was decreasing overall. This decrease was noted in the previous data analysis as well. The gender patterns were also the same as the previous data analysis, with females constituting about two-thirds of our students, while males constituted about one-third, and a small percentage not reporting (same increasing trend as previously analyzed data sets). The only exception in the gender data was in the academic calendar year 2006-2007 where the ratio was a little more exaggerated towards females (68:31).

Success rate by gender trends

Males and females were only about 2% apart at the most (in the academic year 2010-2011 they were statistically identical). In the academic years 2005-2006 through 2007-2008, females did slightly better, but males did a little better during 2008-2009 through 2009-2010. Those not identifying gender fluctuated in their success throughout the study period, with half the period demonstrating the lowest success and the other half demonstrating the highest success of all three groups.

Success rate by ethnicity trends

The following groups were observed to fluctuate with no general trend over the study period: Native Americans, Asians, Blacks, Unknown. Pacific Islanders decreased then increased (beginning in the academic year 2008-2009), while Hispanics steadily increased over the study period. Whites showed a slight increase over the study period, and the limited data (2009-2011 only) for the more than one ethnicity category showed an increase for that group. It was striking that the group with the lowest success rate over the entire study period was Blacks. Whites had the highest success rate over the study period with the exception that Native Americans had the highest in the academic year 2008-2009. The second the lowest success rates were shared equally amongst these groups during the study period: Native Americans, Hispanics, and Pacific Islanders.

The course-by-course data given over each academic calendar year showed a few notable trends. Blacks seem to almost universally have had the lowest success rates during the study period. Because of the sheer volume of the data, it was hard to pick out other obvious trends, but the other groups that had low success rates (but not as consistently from course-to-course like Blacks) were Native Americans, Hispanics, and Pacific Islanders. In spite of the data trends discussed in the previous paragraph's analysis, whites did not always have the highest success rate on a course-by-course basis. Finally, in comparing the non-majors' courses, with allied health preparatory courses, and majors' courses, there was another difference. It was noted than in some of the higher level majors' courses, there was less diversity in terms of some ethnicities not being identified. This could mean that either there was a true lack of those students in those courses, or they were not identifying themselves as such, or their numbers were captured (but were "hidden from view") under the "more than one ethnicity" category.

Success rate by distance education trends

For the six online classes offered during the study period, the success rates were either the lowest compared to traditional face-to-face course (the ethnicity data was used for comparison for the same course), or they were the highest (or tied for the highest). The Biology 112, 118 and 145 courses scored the lowest in success rates when compared to the respective traditional face-to-face course. Biology 120 and 141 were a mix of high and low success rates (compared to the traditional course), while Biology 199 rates were the same as the traditional course for most of the study period.

Discussion of success rates and the Biology Department approach

When we thought about student success, we thought of it holistically, with our interest being in improving the learning of all students, not any one subpopulation in particular. The two biggest approaches to increasing student success in traditional face-to-face courses that have been initiated by the department during the study period were:

1) The institution of the Biology Learning Center (BLC), and
2) The continuation of the Bridges to the Future Program (in partnership with SDSU).

As we moved into the new Science building in Spring 2007, we gained space to house a peer-tutoring center for the Anatomy, Physiology, and combined "A and P" courses; hence, the BLC was born. This center allows students to get personalized tutoring by our best Anatomy and Physiology students, and gain access to models and computer programs to facilitate their learning outside of the classroom. It is used frequently by students in those courses, as well as being a general study area for all students in Biology courses. In looking specifically at the data for these courses (Biology 140-145) during the time the BLC program was implemented, there does seem to be an overall trend for improvement in success rates for most when we looked at the ethnicity success data. There was also a definite trend for improvement of success rates when we looked at the gender success data. When we examined the same two data sets, looking at before and after the BLC was implemented, there were some gains, but mostly for Biology 141, 144 and 145. In terms of our second major approach to increasing student success, our ongoing leadership in the Bridges to the Future program has allowed us to witness that the few Biology students (all underrepresented students in the sciences are eligible, not exclusively Biology) in that program do benefit greatly. The Bridges faculty (Golden, Milgrim, Perchez) really get to know those students, and see their progress in the courses they take in our department, as well as across campus. We see them successfully transferring to universities, getting their Bachelor's degrees, and going on to post-graduate programs, etc. Finally, in addition to these group efforts to improve student success, individual faculty continue to encourage our students to utilize office hours, attend Math Review Workshops (held by our campus Math department), offer recitations for challenging subjects outside of regular class and office hours, and offer non-credit study skills courses.

5.5 If state or federal licensing/registration examinations govern the program, please comment on student success.

N/A

5.6 Referring to Appendix 8- Degrees and Certificates if the program offers a degree or certificate in the college catalog, explain the trends regarding number of students who earn these degrees and/or certificates.

As clearly shown in **Appendix 8**, very few Associate Degrees in Biological Sciences have been awarded each semester in the last 5 years. This probably does not reflect the number of students who actually complete the course requirements for the degree, which fully articulate for transfer to SDSU, UCSD and several other CSU and UC campuses. The college authorities might consider some mechanism for awarding degrees automatically when students have successfully completed a certain selection of courses and number of units. This might be piloted for students who finish all the necessary work at Grossmont. In addition, a large number of students take Biology classes (Bio 120, 140, 141, 142, 144, 145, 152) to fulfill the prerequisite for the allied health courses. Completion of the prerequisite is reflected in student transcripts, but there is no official degree awarded for successfully completed the prerequisites.

5.7 Describe activities your faculty has implemented to provide and maintain connections to primary, secondary and post secondary schools.

Two faculty members (Caldwell, Perchez) have given presentations to local elementary school classrooms (Sunny View and Northmont, Cajon Park) about reptiles, and germs and nuclear DNA extraction. Shearer has worked and is still working with the Salk Institute's Mobile Sciences Lab, teaching Molecular Biology to middle-school students.

Shearer has worked with Cary Willard (Chemistry) for a couple of years with the BeWISE science program for high school girls. Milgrim and Shearer work directly with local high school students for one week (~40hrs) in a summer intensive lab skills prep course ("Biotechnology Skills Bootcamp"). The students are chosen via a competitive application process administered by the San Diego Workforce Partnership and Southern California Biotechnology Center. Following their preparation the students are placed for 7 week internships at area academic labs (The Scripps Research Institute, UCSD). Our department provided technical support for one of the Salk Institute for Biological Research programs in the form of re-supplying prepared "kits" for area High School Science teachers to present basic principles of DNA science to their students.

Because new curriculum must be developed in a manner to allow transfer of our courses to the local universities, the department maintains communication with SDSU, UCSD, and CSUSM. In addition, various department members maintain amicable contacts for correspondence with Southwestern College, City College, Miramar College, University of San Diego, National Marine Fisheries Services, Scripps Institution of Oceanography and CSU San Bernardino. We also contact colleagues at Cuyamaca College, regarding course articulation.

Lastly, and equally importantly, all faculty compose and send letters of recommendation and/or grade progress reports for our students for admission/acceptance for programs/internships/scholarships.

SECTION 6 - STUDENT SUPPORT AND CAMPUS RESOURCES

6.1 Indicate how the program utilizes college support services (i.e. Learning and Technology Resources Center; learning assistance centers for English reading and writing, math, technology mall, and tutoring center; Instructional Media Services, CATL).

All instructors provide statements in their syllabi with regard to student access to DSPS as well as tutoring in the Learning and Technology Resources Center. Large numbers of students use the LTRC tutoring for Bio 120. We actively encourage them to do so in class and actively recruit successful students to work as tutors; however we rarely have enough qualified tutors available to meet demand. Students who wish to apply as peer tutors must have the recommendation of a full-time faculty member in the Biology Department in order to serve.

The Biology Learning Center, which was established in 1997 in conjunction with Biology 198 (Supervised Tutoring), is a way to provide students with extra time to use the anatomical models, microscopes, slides, video player, and histology CD-ROMs with computers in the anatomy and physiology laboratory. Qualified tutors are hired on a regular basis to provide assistance to students who use the Biology learning center. Shina Alagia, the supervisor of the Learning Center and Sharon Farley, the Senior Biology Tech work in coordination to provide assistance by means of tutoring, extra models, handouts, access to computers etc. Informal survey of student performance in classes like Biology 140, 142, 144 and 145 indicate that student success is positively affected by usage of this facility.

We work closely with IMS (instructional media) and ICS (instructional computing---- help to maintain classroom technology.

6.2 Analyze the results of the Student Survey - Appendix 7 and describe student utilization and satisfaction with campus resources as it relates to your program (i.e. availability, usage, relevance).

The most useful campus resources for students in the Biology Department (among those for which data was collected in the survey) were tutoring and the library. Indeed, about 80% of students are using the library (both on-campus and on-line) and 75% of these find the resources "Very Helpful" or at least "Helpful". About 60% of students report using the tutoring center. Although more students might benefit from tutoring, we feel this is a robust number. Student satisfaction among those using the tutoring services was about 75%.

6.3 Describe some of the activities for which your department has used the Institutional Research Office or other data sources.

The Biology Department has not done any projects with data from IR since the last Program Review. However, we collected data over three semesters in collaboration with the English Department to assess the relationship between the reading grade level of students and their success in the Biology 120 class. These data showed that there wasn't a strong pattern for grades of A, B, or C, but if you just look at students receiving grades of A or B, those are more likely to have a reading grade level of 10^{th} or higher. While the results did not support implementing an English prerequisite for the class, it does reinforce the strategy of counseling students to meet the recommended preparation before attempting the class.

6.4 Working with your library liaison evaluate and provide a summary of the current status of library resources (i.e. books, periodicals, video, and databases) related to the program.

The Biology Department greatly appreciates the library staff which has been very receptive to suggestions from biology faculty members. Without the help of the librarians, we would not have time to contribute/evaluate many suggestions for the collection. Specifically, some of our references need to be routinely updated. Examples include textbooks and other books in areas with rapidly changing topics such as physiology, endocrinology and cell biology. Medical texts or references need to be automatically updated when new editions are published.

The Library staff members have also routinely called upon the biology faculty members to review the collection for outdated or no longer useful books. Certainly, textbooks over 10 years old are less useful, but the Library's guidelines on the standards used for evaluating the usefulness of books for Grossmont's collection should be clarified the next time a review is conducted. Otherwise, biology faculty members may have less than practical personal guidelines, such as historical significance, in mind when they evaluate books.

The Library's Limited Loan section regularly used by some biology faculty members as a means to make text books, articles, etc. available for student use. Some instructors are using the library's "online reserve" option, which allows students off-campus access to some limited loan materials. Mostly, faculty members seem to rely on their personal collections as the primary resources for this section.

In addition, each semester the Human Physiology Lab (Bio 142) is provided with a 75 minute demonstration as to how to conduct library research. This is presented in the library by media librarian, Roxane BenVau.

6.5 How does the program work with the various student support services (i.e. Counseling, EOPS, DSPS) to help students gain access to courses, develop student education plans, make career decisions and improve academic success? How does your program communicate specific and current information that can be used by those student service groups?

The Department Co-Chairs, Craig Milgrim and Virginia Dudley, annually attend joint meetings with the Counseling Department. These meetings are held to discuss student needs and success and also to decide the relevance of existing pre-requisites for classes offered by the Biology Department.

6.6 Describe how the department uses available technology to enhance teaching and learning and to communicate with students? According to the Student Survey in Appendix 7, how do students respond to the use of technology?

The entire faculty in the Biology Department relies extensively on email to communicate with students as well as for interdepartmental communication. Most faculty members utilize Blackboard to make notes, PowerPoint presentations, audio podcasts, homework assignments and grades readily available to students. This medium also provides an email function in which instructors can send mass mailings to their entire classes.

Instructors utilize specialized scientific computer applications in general biology, physiology and statistics labs. In addition, Both Craig Milgrim and Shina Alagia maintain class Web pages on the college Web site. These sites contain multiple links to many other valuable Internet sites that the students can explore. Some of them contain useful animations to help students understand some of the complex physiological processes. Michael Golden also uses his faculty Web page to announce upcoming field trips and post reference to other Web sites.

Three hybrid-online classes have been developed by faculty and added to the curriculum during the past five years. These are Human Biology (Bio 118-Caldwell), Human Physiology Lecture (Bio 141-Caldwell) and Anatomy and Physiology I Lecture (Bio 144-Alagia)

6.7 Identify and explain additional technological resources that could further enhance student learning.

We already have made a substantial investment in technology for the Biology laboratory classrooms. We will have two computer carts (one of them in place, one of them new in Spring 2012) providing 16 laptops each to use for data analysis, specialty software applications and internet activities. These are used by Bio 110, Bio 120, Bio 142, Bio 215, Bio 230, and Bio 240 at least once during the semester. Some classes, like Bio 215 use the computers every week. The Physiology Lab classes (Bio 142) will also use (new in Spring 2012) specialized BioPac equipment and software and Statview. There is a special program DNA Reader that is used with Elisa gel equipment in Bio 230 and the summer Biotech Boot Camp program. The department has six microscope cameras and three Kenavision digital mini-scopes for projection of specimens onto the screen during lab and saving images for use in slideshows and lab manuals. We also have four Netbook computers for incidental use of faculty and staff. Currently, our need is for a dedicated, ongoing, stable budget line item for ongoing upkeep, maintenance, and software upgrades for our existing technology.

6.8 Comment on the adequacy of facilities that your department uses. (e.g., does the room size and configuration suit the teaching strategies?)

The prep areas and lab classrooms we use in the new sciences building are adequate for the Biology Department current and foreseeable needs, since they were especially planned for us. Most of the post-construction issues have been resolved.

A budget line item for funding for ongoing upkeep and maintenance of the outdoor areas (lath house, green house, and nature preserve) is still needed. Michael Golden's Spring 2012 Sabbatical project was to work on repairs, maintenance, and improvements to safety in the nature preserve. He also worked on proposals to obtain funds for major construction needed for student safety and access to the site. However, these sites require ongoing, stable funding.

SECTION 7 - COMMUNITY OUTREACH AND RESPONSE

7.1 How does your program interact with the community (locally, statewide and/or nationally)? Describe activities.

Individual members of the Biology Department have been contributing to the community beyond the college. The following is a list of community improvement projects to which members of Biology department have contributed:

Craig Milgrim and Allison Shearer led and continue to lead a summer program that has direct connections to the High Schools in the Grossmont service area. The partnership is with San Diego Workforce Partnership and the Southern California Biotechnology Center. The students spend 1 week in an intensive "Biotechnology Skills Boot Camp" at Grossmont (taught by Allison, Craig, and representatives from Scripps Research Institute) followed by a 7 week internship in an Academic or Industry Research lab.

Craig Milgrim also participates in CAVA – California Virtual Academy: He has provided lab space and connections to Grossmont College for "Virtual Academy" Students (H.S. Students from Home School program). In addition, in Summer 2009 he partnered with USD on a Grant for a TEM/SEM. He has served as a SDICCA Mentor, and was a partner in both a "Succeed Grant" and a Federal Stimulus USD grant in 2010.

Michele Perchez has served as an integral part of the NIH Bridges to the Future Baccalaureate Program. This program provides support to institutions to help students from groups underrepresented in the biomedical and behavioral research areas transition at a critical stage in their development as scientists, from a two-year community college to full four-year baccalaureate program. She has also presented outreach programs at local preschool and elementary schools, helped advise the GC Science Festival in 2009, presented at the 1st annual GC Summer Institute ESL Learners and Learning Styles workshops, and volunteered in the BEWISE girls program.

Virginia Dudley served as a volunteer for the GC science workshop in 2007, as well for activities during the public open house celebrating the College's 50 year anniversary.

Michael Golden has also served the Bridges to the Future program, beginning in 2006 and continuing through the present. In 2010 he received SDSU's Homer Peabody award for excellence in teaching and mentoring. Professor Golden is very active in environmental biology in East San Diego County. With assistance from the Barona Museum, he has developed a listing of Native American names and usages of plants in the GC Wildlife Preserve, and throughout the county. With the Silverweed Audubon Society he developed a new field trip with the reserve manager. Working with members of the California Native Plants Society he helped engineer the campus landscape conversion program.

He worked with the California Chaparral Institute in developing a Coastal Sage Scrub restoration project. He also serves on the advisory committee for a Meditation center on campus, working with Sodexo who will fund this project.

Bonnie Ripley has published three peer-reviewed articles during this program review cycle:

> Archer, Frederick I., Karen K. Martien, Barbara L. Taylor, Richard G. LeDuc, **Bonnie J. Ripley**, Geof H. Givens, and John C. George. (2010) A simulation-based approach to evaluating population structure in non-equilibrium populations. *Journal of Cetacean Research and Management* 11: 101-113.
>
> **Ripley, Bonnie J.** and Marie A. Simovich. (2008) Species richness on islands in time: variation in ephemeral pond crustacean communities in relation to habitat duration and size. *Hydrobiologia* 617: 181-196.
>
> **Ripley, Bonnie J.** and Hal Caswell. (2008) Contributions of growth, stasis, and reproduction to fitness in brooding and broadcast spawning marine bivalves. *Population Ecology* 50: 207-214.

She has also worked with Pearson Publishing in 2008 in presenting an attended poster and oral presentation on teaching biology to non-majors, as well as participated in a focus group on non-majors textbooks. Dr. Ripley reviewed a General Education Biology textbook chapter for Freeman Publishing in 2009, and was a GC Science Festival speaker during the same year. In 2009 she also reviewed two manuscripts for Hydrobiologia Journal, and initiated a partnership with USD for above-mentioned TEM/SEM proposal.

Allison Shearer volunteered at the Sally Ride Festival in 2006, served on the UCSD Biology Students Services Association in 2007, and was a leader and workshop coordinator for the BEWISE Girls Advisory Committee between 2007-2009. She worked on the GC Science Decathlon (outreach) program in 2008, and presented lectures to 5^{th}-12^{th} grades at the San Diego Natural History Museum on Science and Body Worlds in 2009. Finally, during the summers of 2009 and 2010 she worked on the Biotech Summer Boot Camp.

Shina Alagia helped with Curriculum development for National City inner-city schools. During 2007 she was a presenter at Cuyamaca College on Environmental Biology

Sue Caldwell has provided several reptile presentations at local preschool and elementary schools. She also worked with Cary Willard on the 2008 GC Science Decathlon outreach.

Advisory Committee Recommendation

Some disciplines are required to have advisory committees. Answer this question if this is applicable to your program. In Appendix 9, please list the organizations represented on the Advisory Committee and include samples of the meeting minutes.

7.2 ***If appropriate, summarize the principal recommendations of the program advisory committee since the last program review. Describe how the program has responded to these recommendations. Include the date of last meeting and frequency of meetings. List organizations represented.***

At this time the Biology Department has no Advisory Committee.

SECTION 8 - FACULTY/STAFF PROFESSIONAL DEVELOPMENT

8.1 Highlight how your program's participation in professional development activities including sabbaticals (listed in Appendix 10) has resulted in improvement in curriculum, instruction, and currency in the field.

The following is a partial list provided by various members of the Biology Department. This includes but is not limited to the following:

Several faculty members attended conferences/workshops to maintain currency in their subject matter for teaching (1) and/or for the improvement of instruction in general (2):

(1)
Alagia: Wiley's Visualizing the Future for Anatomy, Physiology and Microbiology;
Caldwell: Neuroscience;
Milgrim: RNA Interference, Epigenetics;
Perchez: RNA Interference, Two American Society for Microbiology Conference for Undergraduate Educators (ASM CUE) conferences, SDSU microbes and heart disease conference.;
Ripley: Non-majors teaching workshop

(2)
Alagia: WASC SLO assessment conference;
Caldwell: summer online class for Blackboard 9; Teach-In in support of education in California;
Perchez: Grossmont College Summer Institutes workshops (ESL, Learning Styles); Teach-In in support of education in California

Several faculty members have self-initiated and conducted major revisions or new adoptions of laboratory manuals to strengthen course curriculum (1), developed and offered new courses (2), and one member was active in the development of new delivery methods for existing courses (3). The motivation behind embarking on these activities was to improve student success:

(1)
Caldwell: Biology 142 manual update;
V. Dudley: Biology 110 manual (co-authored, in house major rewrite) update as Sabbatical project; Biology 105 (co-authored, published Bartlett and Jones, 2011)
144 & 145
140
Milgrim: updated manual for Biology 230
Perchez: adoption of new Biology 152 manual and multiple revisions (one of authors. published by Pearson)
(2)
Ripley: Biology 240;
Shearer: Human cadaver dissection (Biology 199 course)
(3)
Caldwell: podcasts for Biology 141 and Biology 118, hybrid course for Biology 141 and Biology 118

Several faculty members have voluntarily given guest lectures (1), published scientific papers or news articles (2), or reviewed materials destined for publication (3):

(1)
Shearer: BodyWorlds anatomy lectures at San Diego Natural History Museum;
Valtierra: H1N1 lecture, Toronto, Canada.
(2)
Ripley: three peer-reviewed papers;
Howard: one article;
Meier: one paper;
Valtierra: one paper
(3)
Perchez: oxidase protocol for JMBE;
Ripley: multiple manuscripts for publication in peer-reviewed journals, and reviewed a textbook chapter;
Lillis: coagulase protocol for JMBE

FINAL SABBATICAL PROJECT REPORT ABSTRACT: Prof. Virginia Dudley

My project was to write a major revision of the Biology Department's, in-house, Environmental Biology Laboratory Manual. The manual includes 17 laboratory exercises. It had not had more than minor revision since the original labs were written in 1965, nearly 43 years ago.

The majority of the exercises had significant problems with outdated information, insufficient lab safety protocols, incorrect directions for experiments, lab exercises that were no longer used and exercises written for field trip destinations that had changed or no longer existed. We had a high turnover rate of adjuncts that were teaching this course. New adjuncts needed a current, accurate lab manual from which to teach. In addition, this course is so unique that there is no published lab manual available as an alternative.

I extensively revised and rewrote all the laboratory exercises in the Environmental Biology Lab Manual solving the many problems described in my proposal. I also developed new components including laboratory SLOs. I developed new approaches to several field labs and lab safety protocols, that had been lacking, revised and added new ones.

The Environmental Biology manual had never had a significant rewrite because no qualified instructor had the time to devote to such an endeavor. Though a few lab exercises had had some revision, the last one was about ten years ago and the changes were minor. The manual's inferior state reflected poorly on our Biology Department and therefore the college.

Environmental Biology is one of only three Biology courses that satisfy the general education transfer requirement for the Life Sciences with a laboratory for non-majors. Until section cuts were needed in response to budget restraints, each semester our department had been offering as many as eleven sections of Environmental Biology serving over 300 students. The manual's substandard condition severely reduced this course's educational value to the many students who passed through it. My project advanced the GCCCD mission to provide educational excellence, further its educational goals and now represents the high standards of the Biology Department and of Grossmont College.

8.2 ***Describe any innovative professional development activities your program has created.***

1. "Working with New Technology for Microscopes with Cameras" Workshop (Shearer)
2. "Dealing with Stress" Workshop (Caldwell)
3. Presentation: "Development of update specimen/dissection policy" (Milgrim)
4. Development of Health Science (Allied Health) Academic prep info sheet. (Shearer, Milgrim)
5. Working Lunches (Faculty and Staff)
6. "Reading Tests for Biology Students" (Milgrim in collaboration with English Department
7. "Using Blackboard" (Shearer)
8. "Environmental Biology and Related Issues" (Alagia – at Cuyamaca College)

8.3 ***Describe how your faculty shapes the direction of the college and/or the discipline (e.g., writing grants, serving on college/district committees and task forces, Academic Senate representation, presenting at conferences, etc.).***

The Biology Department Faculty are active in many areas on campus, therefore, our influence on the campus environment is found everywhere. We are one of the larger departments, so we have three representatives on the Faculty Academic Senate (consistent attendance by V. Dudley, Golden, and Perchez, with some attendance by Milgrim and Shearer as needed).

We have many faculty that have served, and are currently serving on various college committees:

Alagia: Faculty Professional Development Committee, Outstanding Faculty Selection Committee, SLO Rapid Response Team, Sabbatical Committee, AFT Liason, WACC Committee.

Caldwell: Tenure Committee, Faculty Advisor (Campus Christian Fellowship, Challenge Clubs), Faculty Co-Advisor (Fellowship of Christian Athletes Club), Week of Welcome Booth.

V. Dudley: Full-time Faculty Hire Committee Chair, Science Building Task Force Leader, Tenure Review Committee Chair, Department Co-Chair

Golden: Planning and Budget Committee Co-Chair, Planning and Budget Committee, Tenure Review Committee Chair, Tenure Review Committee, Bridges to the Future Program Coordinator, United Faculty Steering Committee, United Faculty Senator-at-Large, Student Success Committee, American Federation of Teachers Representative, American Federation of Teacher Vice President, Grossmont College Landscape Committee

Milgrim: Tenure Review Committee Chair, Full-time Faculty Hire Committee, Microbiology Technician Hire Committees, Department Co-Chair, Planning and Budget Committee, Academic Senate Officer.

Perchez: Microbiology Technician Hire Committee, Senate Election Committee, Pre-Professional Health Club Co-advisor, Scholarship Committee, Bridges to the Future Mentor, Student Grievance Committee, Microscopic Worlds workshop at the 50th Anniversary Open House.

Ripley: Accreditation Steering Committee, Microscopic Worlds workshop at the 50th Anniversary Open House. Week of Welcome Booth.

Shearer: Pre-Professional Health Club Advisor, BeWISE Girls Advisory Committee

Monroe: Institutional Review Committee

Several grants were awarded to the Biology Department:

Golden: greenhouse plant purchase grant (ASGC), Bridges to the Future program (NIH grant with SDSU) covers faculty salary and ancillary program costs

Milgrim: Southern California Biotechnology Center grant to fund the one week, summer intensive lab skills prep course ("Biotechnology Skills Bootcamp" , Bio 113) for area High School juniors and seniors, Salk Institute for Biological Research grant(while we don't get any actual monies, we provide technical support in the form of refilling prepared "kits" for area High School Science teachers to present basic principles of DNA science to their students), ASGC cadaver purchase grant, Bridges to the Future (NIH grant with SDSU), American Recovery and Reinvestment Act (ARRA) Bridges to the Future grant (with SDSU)

Perchez: ARRA Bridges to the Future grant (with SDSU)Shearer: ASGC cadaver purchase grant

Lillis: Cyberlearning in Community Colleges grant (ASM CUE conference)

The Biology faculty also participates in shaping the direction of the campus and discipline through the many activities that involve the development of facilities (1), and work on special projects (2).

Dudley: Science Building Task Force Leader, instrumental in the design and overseeing of the new Science Building 1st floor; design and development of the Native Plant Garden which is used by many departments on campus, as well as for outdoor relaxation for all as it provides nice places to sit and contemplate nature

Golden: development of the Greenhouse which is used by the department for science projects, and for cultivating samples used in teaching labs
(2) In addition to some of what is listed under the response to 8.1, please note the following:

Milgrim and Shearer: lead local high school students for one week (~40hrs) in the summer in an intensive lab skills prep course ("Biotechnology Skills Bootcamp")

Perchez: presenter at GC Science Festival

Ripley: Pearson focus group for non-majors textbooks, Grossmont College Science Festival Speaker, Basic Skills Initiative Reading Level Study

Shearer: Science Decathlon, Biology Student Services Association, panel presenter for teaching careers

SECTION 9 - STAFFING TRENDS AND DECISION-MAKING

From the data provided (include the data source), please fill in the table below:

http://www.gcccd.edu/research-planning/documents/research-tools/program-review-data/faculty-staff-reports/hp-srs-fcty-data/grossmont/GC_Staffing_Report.pdf

	Fall 2005	Fall 2006	Fall 2007	Fall 2008	Fall 2009	Fall 2010
# of FT faculty	9	9	10	9	9	8
# of PT faculty	16	18	16	19	18	16
Total Full Time FTEF	8.438	8.030	9.093	8.984	8.501	7.534
Total Reassigned Time	0.812	1.036	1.690	1.000	1.168	0.75
Total Part Time FTEF	4.917	6.250	6.467	8.067	6.617	6.500
Total FTEF	14.167	15.316	17.25	18.051	16.286	14.784
Total WSCH	11,113	10,797	12,514	12,372	12,246	10,694

Utilizing the data in the table ***and the results of your Faculty Survey discussion****, answer the following questions:*

9.1 Explain any observed trends in terms of faculty staffing and describe changes that have occurred (i.e. reassigned time, accreditation issues, expertise in the discipline, enrollment trends).

The most striking observation is the decrease in the number of full-time faculty in addition to the decrease in course sections.

9.2 Discuss part-time vs. full-time ratios and issues surrounding the availability of part-time instructors.

The Biology Department is in great need of increasing the number of full time faculty. In light of the recent retirement of two of the full time faculty members, the Department's staffing need takes a high priority. Unfortunately, State budget constraints have frozen the Department's ability to replace these full-time faculty members. In 2005 the ratio of full-time to part-time instructors was 0.47. By Fall 2010 the ratio was reduced to 0. 33. The nationwide shortages of nurses and other allied health professionals suggest that there is likely to be a sustained or increasing demand for biology courses in the foreseeable future. In addition, the projected growth of private allied health educational programs is sure to rely on the community colleges to provide prerequisite support.

9.3 List and describe the duties of classified staff, work study and student workers who are directly responsible to the program. Include a discussion of any trends in terms of classified staffing and describe changes that have occurred (i.e. duties, adequate coverage, funding issues).

Class Title: Biology Technician, Senior

Definition: Under the direction of a Dean, perform a variety of responsible and technical duties related to the organization, coordination and operation of biology laboratories and related areas; train and provide work direction to assigned personnel and student assistants as assigned.

Class Title: Biology Technician

Definition: Under the direction of the Dean, perform a variety of technical and specialized duties related to the preparation, operation and maintenance of biology laboratories and related areas; operate and demonstrate the use of specialized equipment and instructional materials; provide information and technical assistance to faculty and students.

Distinguishing Characteristics: The Biology Laboratory Technician prepares, operates and maintains equipment, supplies and instructional materials in a biology laboratory environment. The Biology Technician, Senior, is responsible for coordinating and scheduling laboratory use, participating in budget preparation and control and provides work direction and guidance to assigned personnel and student assistants.

Class Title: Microbiology Technician

Definition: Under the direction of a Dean, perform a variety of technical and specialized duties related to the preparation, operation and maintenance of a microbiology laboratory and related areas; operate and demonstrate the use of specialized equipment and instructional materials; provide information and technical assistance to faculty and students.

Class Title: Biology Technician (Part-time)

Definition: Assist with the technical and specialized duties related to the preparation, operation and maintenance of biology laboratories and related areas.

Class Title: Student Worker/Tutor (part-time)

Definition: Under the direction of an assigned supervisor, perform advanced instructional support functions to individual students or groups of students in a classroom or laboratory environment in a specific instructional area to facilitate effective learning.

9.4 How are decisions made within your program? What role do part-time faculty and/or classified staff play in the department decision-making process?

The full time faculty members regularly hold meetings on a monthly basis. Department meetings are also held during staff development week, and are attended by both full-time as well as adjunct faculty. Every decision made by the Department is initially proposed in these meetings and decisions are finalized, when relevant, after follow up by individual faculty members via email or in subsequent meetings.

Besides the meetings, the department chair sends out regular email notification about issues that concern the entire department as a whole when the need arises. All full time faculty members also regularly communicate via email on deadlines, information relevant to the department, scheduling, room usage etc.

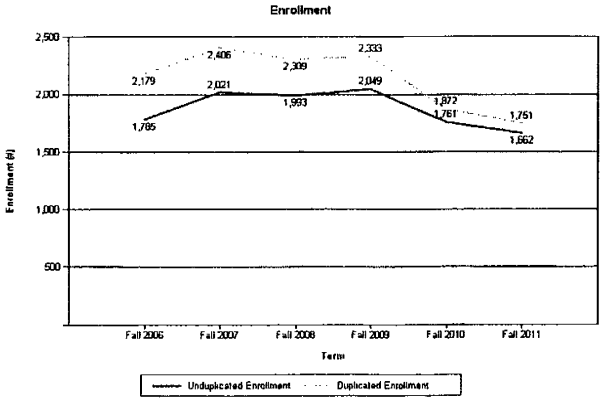
SECTION 10 - FISCAL PROFILE AND EFFICIENCY

Refer to Appendix 11 – Grossmont WSCH Analysis for efficiency. Appendix 3 has the sections and enrollment. Appendix 15 – Fiscal Data: Outcomes Profile also has enrollment information.

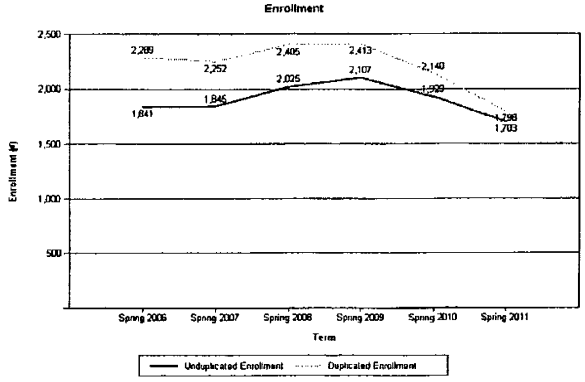
10.1 Analyze and explain any trends in enrollment, numbers of sections offered, average class size and efficiency.

Enrollments during the regular Fall-Spring years between 2005 and 2007 rose sharply (10.5%), leveled off in the next two years, then dropped dramatically (24.9%) in the next two years. This is clearly the result of an initial increase in sections offered during the regular school year, following by a sharp decrease in sections offered.

Grossmont College Enrollment: Fall 2006-Fall 2011: Biology Department

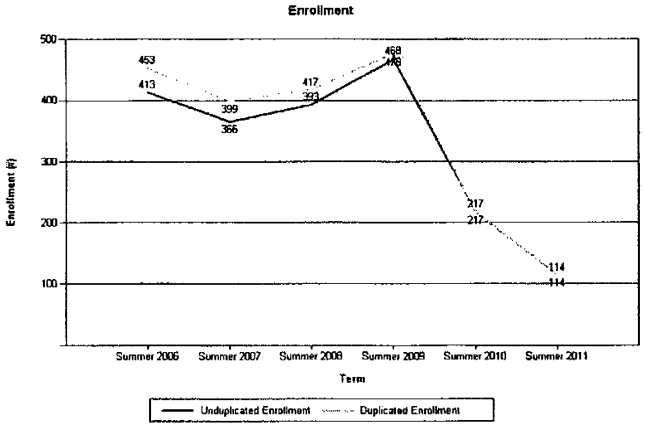


Grossmont College Enrollment: Spring 2006-Spring 2011: Biology Department



At the same time summer school enrollment dropped between 2006 and 2007 (12%), increased in the next two years by 17%, and then dropped 75% between 2009 and 2011. Again, there is a positive correlation between sections offered and enrollment.

Grossmont College Enrollment: Summer 2006-Summer 2011: Biology Department



In the face of these severe section cuts, faculty members have accommodated as many students as possible in each classroom, without exceeding the maximum fire code number.

It should be noted that the gap between duplicated and unduplicated enrollment has decreased tremendously during the six year program review period: again, an indicator of the decreasing number of sections available to students. It is expected that this trend will continue in the future as fewer sections are available.

10.2 Analyze the Earned WSCH/FTEF data in Appendix 11- Grossmont WSCH Analysis. Explain trends for your overall program and for specific courses over a five-year period.

To answer this sub-section, WSCH/FTEF data were extracted from Appendix 11 as well as Appendix 15. The average Biology Department earned WSCH/FTEF values for the successive semesters of Fall 2005 to Spring 2011 were compared to that of the Grossmont College. According to the Appendix 11, % of Max WSCH columns, the majority of Biology courses were above the MAX average of the college, between the successive semesters of Fall 2005 and Spring 2011. In addition, the average % of Max WSCH for the department far exceeded that of GC every semester examined.

The table below gives a semester-to-semester comparison of %Max WSCH between Grossmont College as a whole, and the Biology Department.

%Max WSCH	FA 05	SP 06	FA 06	SP 07	FA 07	SP 08	FA 08	SP 09	FA 09	SP 10	FA 10	SP 11
GC	79.3	74.1	77.9	75.2	78.7	76.7	79.7	79.4	92.6	94.7	95.0	91.9
Bio Dept.	101.1	99.3	95.3	97.2	99.5	98.7	99.9	101.9	109.3	108.8	104.6	101.2

Bio 215 showed the lowest average % max (64.5%), however it should be noted that beginning in the Fall 2009-Spring 2010 year, the course was only offered during the Spring semester. For the last two years of this program review cycle, the average % max for this course increased to 100.5%. A total of seven courses that are close to or above 100% MAX, are Bio 120, 140, 141, 142, 144, 152 and 240. All the courses show an increase in % MAX for the semesters of Fall 2005 through Spring 2011.

10.3 Using Appendix 14 - Fiscal Year FTES Analysis by Program Report and Appendix 15 - Fiscal Data: Outcomes Profile, analyze and explain the cost per FTES of the program in relation to the earned WSCH per FTEF.

The earned WSCH/FTEF for the semesters of Fall 2005 through Spring 2011 was greater than the ratios for the previous program review cycle. The peak ratio (752.77) occurred in Fall 2009. This is partially explained by a noticeable increase in demand, evidenced by large crash lists and overloaded classrooms. Although the demand continued at the same level through the present, the ratio began to decline when class sections were cut, with a ratio of 703.57 in Spring 2011. This ratio was still higher than the average of the previous program review cycle, indicating that full-time biology faculty have accommodated as many students as possible in the existing sections.

When the COST/FTES is compared to the last program review report, the COST/FTES has risen from an average of $1502 to $1685: an overall increase of 12%. These data should not be misleading, in the fact that the total FTES have decreased from a high of 916.23 in the 2008-2009 school year to a low of 705.13 during the 2010-2011 year: a decrease of 23%. The unrestricted general fund cost has also decreased during this period from $1,584,489 to $1,256,383: a decrease of only 20%. Thus, the COST/FTES is mainly a reflection of the severe cuts made to student enrollment.

Finally, and most dramatically, it should be noted that the cost per FTES granted by the State of California is on the average 166% greater than the actual cost per FTES in the Biology Department over the 6 year program review period (State average= $4480/FTES vs. Biology Department average = $1684/FTES)

10.4 If your program has received any financial support or subsidy outside of the college budget process, list the amount of any outside resources and how they are being used.

The Biology Department does not receive any form of consistent outside support for operations or equipment. Occasionally, the Department receives assistance in the form of Grants that are obtained by perseverance and enthusiasm of individual instructors. There also have been instances when members of faculty and classified staff have gone out of their way to scavenge equipment that was donated by Biotech industries and were still usable by the Department. This has proved to be a useful practice. The Department also thankfully appreciates the generous assistance from Associated Students of Grossmont College for continued support on various small scale operations and projects.

SECTION 11 – SUMMARY AND RECOMMENDATIONS

11.1 Summarize program strengths and weaknesses in terms of:

-Teaching and learning

The most important strength of the Biology Department is that it functions as a group of professionals voluntarily working as a team: The ideas and enthusiasm of each individual are stimulated by the mutual support and respect that members have for one another's efforts. Implicit in this environment is the assumption that each Department member has unique talents and contributions to make, and the confidence that each will be impelled to realize their potentials in unexpected and exciting ways, without any particular prompting other than their own sense of professionalism. The Department thus takes a rather idealistic perspective on academic freedom - that individual teachers must feel encouraged to develop their own ideas, but that a strong sense of teamwork is also imperative for a group of individuals to be effective as a unit.

-Academic/vocational quality

The program of studies in biological sciences at Grossmont is designed to be interesting and challenging to both students and teachers. Every effort is made to make the science of biology intellectually accessible to students, emphasizing its relevance to individual citizens and society, and sharing the enthusiasm of the instructors for their field. From available feedback, both objective and subjective, the reputation of the Department is excellent. However, it is acknowledged that opportunities to enrich the students' laboratory experiences have in the past been missed due to insufficiency of funds for infrastructure and equipment maintenance and improvement. Nevertheless, a continuing effort is being made to improve the program and plan for future development.

-Student access and success

The members of the Biology Department continually endeavor to improve the opportunities for our students and to help them succeed in achieving their goals. The Department consists of dedicated teachers who are very committed toward maintaining the quality of education and improving student success.

-Implementing and executing the department's vision and mission statement

The Biology Department continues to seek individuals with high professional and academic standards when hiring searches are conducted. In addition, improving the diversity of specialty areas, orientations, and interests among Department members is an important goal as guidelines are developed for such searches.

-Fiscal stability

Clearly, the Biology Department must have stronger and more consistent financial commitment, particularly in the area of laboratory support, to develop the quality program possible with the current professional and academic talent of the faculty. Attracting equally qualified and dedicated teachers as the Department grows and replaces retirees in the future will require the College to support a more realistic commitment of financial resources for the salaries of new teachers.

11.2 Describe any concerns that have affected or that you anticipate affecting the program before the next review cycle. These may include items such as increases or decreases in number of full-time and adjunct faculty, sections offered, and growth or decline of the program.

The ongoing lack of funding at the State level continues to put the goals of the department on freeze, particularly those of hiring full-time faculty to replace those who have retired.

*11.3 **Make a rank-ordered list of program recommendations. These recommendations should be clearly based on the information included in Sections 1 through 11 of this document. You may include recommendations that do not require additional fiscal resources.***

#1: Hire a full-time faculty member to teach and coordinate Bio 120.

#2: Hire a full-time faculty member with a background in molecular biology who can teach in the Health Science Preparation courses.

#3: Hire a full-time faculty member with a background in botany and natural history.

#4: Expand the microbiology program by hiring a full-time faculty member with a background in public health and a full-time microbiology technician. (Position was submitted and approved in 2004, but frozen in 2009.)

#5: Index the supply budget to the rate of inflation.

#6: Maintain current community partnerships (e.g. Bridges, HASPI, LSSI).

#7: Maintain outdoor laboratory facilities (lath house, greenhouse, native garden, wildlife sanctuary)

#8: Maintain and expand tutoring facilities (Biology Learning Center, Microbiology Learning Center)

#9: Create and fund a plan to maintain and expand learning technology (e.g computers, microscopes, physiology data acquisition lab equipment)

#10: Create an ongoing stable funding source for cadaver maintenance and replacement.

#11: Create an ongoing stable funding source anatomical model maintenance and replacement.

#12: Institute a periodic evaluation of the Biology Learning Center for continuing improvement of student success.

#13: Explore the creation of an online environment for students to report on their post-academic progress.

APPENDIX 1

6-Year Unit Plan/Tables

In each of the following 6-year unit plan sections, answer the questions below for the most successful goal that you addressed or achieved during this recent program review cycle.

Curriculum Development

Goal: The only goal was the addition of a Bio 112 laboratory.	
Status of goal	Postponed.
What activities did you undertake to achieve these goals?	Interdepartmental discussions of incorporating sustainability curriculum in the department.
What challenges/obstacles have you encountered?	Budget and section cuts prohibited the implementation of this goal. Between the writing of the plan and present the department has experienced a 39% in class offerings.
Report and explain the data that you have to verify progress toward your goal?	None.
Has this goal changed and why	No. We continue to have this as a goal as our program expands.
How did the achievement of your unit goals help move the college forward toward fulfillment of the planning priority goals in its strategic plan?	Not applicable.
Additional Comments?	

Student Success and Support

Goal: Continue to coordinate the Bridges to the Future program in conjunction with SDSU/NIH.	
Status of goal	Ongoing.
What activities did you undertake to achieve these goals?	• Expanded recruitment of students into the program by expanding faculty, counseling staff and EOPS staff involvement. • Participated in American Recovery and Reinvestment Act including collaborations with the San Diego Workforce Partnership and Scripps Research Institute. • Guest speakers addressing graduate school issues and employment opportunities
What challenges/obstacles have you encountered?	• Decreases in funding. • Increased student interest with insufficient placement slots (due to budget cuts)
Report and explain the data that you have to verify progress toward your goal?	• Michele will send it later
Has this goal changed and why?	NO
How did the achievement of your unit goals help move the college forward toward fulfillment of the planning priority goals in its strategic plan?	• Increased the number of students from under-represented groups in the sciences that transfer successfully. • Increased student knowledge of career opportunities, grants, mentors and scholarships, and other financial assistance. • Opportunities to work in academic research laboratories.
Additional Comments?	

Program Resources and Development

Goals: Infuse technology (both assistive and analytical) across the Biology Lab curriculum.	
Status of goal	Accomplished and ongoing.
What activities did you undertake to achieve these goals?	• Department Action Plan item to expand available mobile computing stations • Department Action Plan to purchase physiology lab hardware and software.
What challenges/obstacles have you encountered?	Incorporation of the hardware and software into the curriculum.
Report and explain the data that you have to verify progress toward your goal?	• Increased the number of mobile computing stations by 100% • Incorporated BioPac software into existing Human Physiology curriculum. • Incorporated standardized spreadsheet programs into BioStat curriculum.
Has this goal changed and why	Yes. It has moved from the planning stage to implementation.
How did the achievement of your unit goals help move the college forward toward fulfillment of the planning priority goals in its strategic plan?	Encouraged student success by incorporating current technology into the Biology curriculum.
Additional Comments?	

Community Outreach/Response

Goal: Maintain and Develop partnerships to increase the number of under-represented groups in Biology and Pre-Health Care.	
Status of goal	Reference "Student Success" Goal
What activities did you undertake to achieve these goals?	Reference "Student Success" Goal
What challenges/obstacles have you encountered?	Reference "Student Success" Goal
Report and explain the data that you have to verify progress toward your goal?	Reference "Student Success" Goal
Has this goal changed and why	Reference "Student Success" Goal
How did the achievement of your unit goals help move the college forward toward fulfillment of the planning priority goals in its strategic plan?	Reference "Student Success" Goal
Additional Comments?	

Faculty/Staff Professional Development

Goal: Maintain and increase the number of full-time Biology Faculty to match our FTEF of 14.4. Includes replacing retiring faculty and the addition of 2 new full-time faculty positions.	
Status of goal	On hold
What activities did you undertake to achieve these goals?	None.
What challenges/obstacles have you encountered?	Budgetary constraints at the State Level.
Report and explain the data that you have to verify progress toward your goal?	The number of full-time faculty is now less than it was during the last program review cycle.
Has this goal changed and why	No.
How did the achievement of your unit goals help move the college forward toward fulfillment of the planning priority goals in its strategic plan?	The goal is on hold.
Additional Comments?	

APPENDIX 2

Catalog Descriptions

BIOLOGICAL SCIENCES (BIO)

BIOLOGY 105 †
Life in the Sea
4 units, 3 hours lecture, 3 hours laboratory
Recommended Preparation: A "Pass" grade in Mathematics 090 and a "C" grade or higher or "Pass" in English 110 or equivalent.
An introductory college-level course using marine plants and animals and their interrelations with their aquatic environment to develop an understanding of modern biological principles and processes basic to all forms of life. Information dealing with several aspects of taxonomy, evolution, ecology, behavior and physiology of marine organisms is included.
Satisfies General Education for: Grossmont College B1; CSU B2; IGETC 5B
Transfers to: CSU, UC

BIOLOGY 110 †
Environmental Biology
4 units, 3 hours lecture, 3 hours laboratory
Recommended Preparation: A "Pass" grade in Math 090 or a "C" grade or higher or "Pass" in English 110 or equivalent.
A basic college-level ecology course designed to acquaint the student with living systems and their environment. Local plants and animals and their habitats will be used to investigate fundamental ecological principles. Almost half of the laboratory periods will be devoted to field studies. Due to the time involved, some of these field studies will take place on Saturdays or Sundays.
Satisfies General Education for: Grossmont College B1; CSU B2; IGETC 5B
Transfers to: CSU, UC

BIOLOGY 112 †
Contemporary Issues in Environmental Resources
3 units, 3 hours lecture
Through the study of basic ecological concepts, students apply their knowledge to contemporary problems dealing with renewable and nonrenewable resources. Environmental resource problems, such as water shortage and pollution, energy shortages, air pollution, increasing human populations and wildlife conservation are integrated with political, economic and social implications. The student will consider alternate lifestyles as possible solutions to existing environmental problems, as well as other means of solving or dealing with these situations.
Satisfies General Education for: Grossmont College B1; CSU B2; IGETC 5B
Transfers to: CSU, UC

BIOLOGY 113 †
Introduction to the Biotechnology Lab
2 units, 2 hours lecture, 1 hour laboratory
This course examines biology laboratory technology as it relates to the field of biotechnology. The class addresses skills and techniques common to the biotechnology industry including measuring activity and quantity of proteins, growth and manipulation of bacteria, genetic engineering, polymerase chain reaction and antibody methods. In addition to hands-on skills, the course will provide context for how and why these techniques are used in the industry. This course enhances the laboratory skills of students wishing to be employed by the biotechnology industry. This course is intended for a specific target population. It is not intended as a training course for employment in the biotechnology industry. The course represents the first step in an eight-week program, which has a lengthy application process.
Transfers to CSU

BIOLOGY 114 †
Heredity, Evolution and Society
3 units, 3 hours lecture
This course presents the basic principles of heredity and evolution. Following an introduction to scientific methods and characteristics of living systems, the student learns about the process of evolution and the mechanisms of heredity. These genetic studies will equip the student to better understand a number of current issues concerning medical genetics, genetic counseling, biotechnology, the cancer problem and human diversity.
Satisfies General Education for Grossmont College B1; CSU B2; IGETC 5B
Transfers to: CSU, UC
† This course meets all Title 5 standards for Associate Degree Credit.
†† This course meets all Title 5 standards for Nondegree Credit.

BIOLOGY 118 †
Introduction to Human Biology
3 units, 3 hours lecture
An introduction to biological principles with a human perspective. Such basic areas as cell structure and function, the structure, function and adaptation of organism, cellular and population genetics, and ecosystem structure will be covered by utilizing the human species to develop an understanding of processes basic to all forms of life.
Satisfies General Education for: Grossmont College B1; CSU B2; IGETC 5B
Transfers to: CSU, UC

BIOLOGY 120 †
Principles of Biology
4 units, 3 hours lecture, 3 hours laboratory
Recommended Preparation: A "Pass" grade in Math 090 or equivalent and a "C" grade or higher or "Pass"in English 110 and Chemistry 115 or equivalent.
A survey of the basic principles of biology. The unifying concepts of biology, such as cellular organization, plant and animal structure, metabolism, genetics, evolution and ecology, are discussed. The laboratory component of this course will be a laboratory experience which uses a lecture/ laboratory instruction format designed to reinforce and augment the student's understanding of the basic principles of biology addressed in the lecture portion of the course.
Satisfies General Education for: Grossmont College B1; CSU B2; IGETC 5B
Transfers to: CSU, UC (credit limited: see page 37)

BIOLOGY 132 †
Mammals of the Sea
2 units, 2 hours lecture
Recommended Preparation: A "C"grade or higher or "Pass"in Mathematics 090 and English 110 or equivalent.
A course covering evolution and adaptation, taxonomy, behavior, zoogeography, and physiology of whales, pinnipeds, and other marine mammals. Historical and modern interactions of marine mammals with humans are also examined.
Transfers to: CSU, UC

BIOLOGY 140 †
Human Anatomy
5 units, 3 hours lecture, 6 hours laboratory
Prerequisite: A "C"grade or higher or "Pass"in Biology 120 or equivalent.
The student will examine the structure of the systems of the human body, with emphasis divided between gross anatomy and the cellular detail (histology) of tissues. The students will use the cat as a dissection specimen in the laboratory along with selected human organs and tissue slides including cadaver and computer demonstrations. The course meets the anatomy requirement for baccalaureate degrees in nursing, a variety of paramedical fields, including physical and occupational therapy, and exercise science.
Satisfies General Education for: Grossmont College B1; CSU B2; IGETC 5B
Transfers to: CSU, UC (credit limited: see page 37)

BIOLOGY 141 †
Human Physiology
3 units, 3 hours lecture
Prerequisite: A "C"grade or higher or "Pass"in Biology 120 or equivalent.
A study of the function and interrelationships of the nervous, endocrine, muscular, circulatory, respiratory, digestive, exocrine and reproductive systems of the human body. The course emphasizes the homeostatic nature of these systems with some reference to human disease states.
Satisfies General Education for: Grossmont College B1; CSU B2; IGETC 5B
Transfers to: CSU, UC (credit limited: see page 37)

BIOLOGY 142 †
Human Physiology Laboratory
2 units, 6 hours laboratory
Prerequisite: A "C"grade or higher or "Pass"in Biology 120 or equivalent.
A laboratory experience utilizing a lecture/laboratory instruction format, designed to reinforce and expand the student's understanding of basic physiological principles.
Satisfies General Education for: Grossmont College B1; CSU B3; IGETC 5B
Transfers to: CSU, UC (credit limited: see page 37)

BIOLOGY 144 †
Anatomy and Physiology I
4 units, 3 hours lecture, 3 hours laboratory
Prerequisite: A "C"grade or higher or "Pass"in Biology 120 or equivalent.
This course is a study of the following topics and human systems: introduction to biochemistry, the cell, tissues, bone, muscle, endocrine and nervous systems. The functions and interrelationships of these systems are studied. The course emphasizes the homeostatic nature of these systems with some reference to human disease states. The cat and sheep are the primary laboratory animals. This course is designed for students entering associate degree programs in nursing, respiratory therapy, cardiovascular technology and related health occupational fields. Majors in nursing and other paramedical areas seeking a baccalaureate degree should check for course equivalency with transfer institutions.
Satisfies General Education for: Grossmont College B1; CSU B2; IGETC 5B
Transfers to CSU, CU (credit limited: see page 37)

BIOLOGY 145 †
Anatomy and Physiology II
4 units, 3 hours lecture, 3 hours laboratory
Prerequisite: A "C"grade or higher or "Pass"in Biology 144 or equivalent.
This course is a continuation of Biology 144, Anatomy and Physiology I. It is a study of the anatomy and physiology of the following systems: circulatory, respiratory, digestive, excretory and reproductive systems. The functions and interrelationships of these systems are studied. The course emphasizes the homeostatic nature of these systems with reference to human disease states. The cat and sheep are the primary laboratory animals. This course is designed for students entering associate degree programs in nursing, respiratory therapy, cardiovascular technology and related health occupational fields. Majors in nursing and other paramedical areas seeking a baccalaureate degree should check for course equivalency with transfer institutions.
Satisfies General Education for: Grossmont College B1; CSU B2; IGETC 5B
Transfers to CSU, UC (credit limited: see page 37)

† This course meets all Title 5 standards for Associate Degree Credit.

BIOLOGY 150 †
(Geography 150, Geology 150, Oceanography 150)
Field Study of the Natural History of San Diego County
3 units, 2 hours lecture, 3 hours laboratory
Prerequisite: A"C"grade or higher or "Pass" in Biology 110 or 120; or Geography 120 or 121 or 140; or Geology 110 or 111; or Oceanography 112 or equivalent.
A team-taught field study of the natural history of San Diego County and environs, with special attention to the role of biologic, geographic, and geologic processes that shape its development. Emphasis on field measurement techniques and use of technology. Four weekends in spring semester only. Campouts required. Students with credit in Biology 150 will not be able to enroll in Geography 150, Geology 150 or Oceanography 150.
Transfers to: CSU, UC (credit limited: see page 37)

BIOLOGY 152 †
Paramedical Microbiology
5 units, 3 hours lecture, 6 hours laboratory
Prerequisite: A"C"grade or higher or "Pass"in Biology 120 or equivalent.
Recommended Preparation: A"C"grade or higher or "Pass"in Chemistry 115 or equivalent.
An introduction to the major groups of micro-organisms and the diseases they cause. Emphasis in the lecture and laboratory is on concepts and techniques relevant to students entering paramedical professions: identifying and handling bacteria, basic principles of immunology, medical microbiology and epidemiology. Principles of microbial physiology, genetics, growth and control are also discussed. Biology 152 will also satisfy the introductory microbiology requirement needed by students who major in nursing and other paramedical fields, leading to a B.S. or B.A. degree.
Satisfies General Education for: Grossmont College B1; CSU B2, B3

BIOLOGY 180 †
Ecology, Evolution and Biological Diversity
3 units, 3 hours lecture
Prerequisite: A"C"grade or higher or "Pass"in Math 103or equivalent.
Recommended Preparation: A"C"grade or higher or "Pass"in a previous biology course such as Biology 120 or equivalent.
This course IS NOT recommended for life science majors. This course surveys the general principles of biology at an advanced level. Emphasis is placed on the following topics: characteristics and phylogenetic classification of life, a survey of the physiological adaptations to aquatic and terrestrial environments, a comparison of the reproductive and development strategies utilized by various phylogenetic groups, a study of fundamental ecological principles, a survey of classical and population genetics, mechanisms of evolution and the evolutionary basis of species classification. It is suggested that students contact the anticipated transfer institution to ascertain specific transfer requirements that may be fulfilled by this course.
Satisfies General Education for: Grossmont College B1; CSU B2; IGETC 5B
Transfers to: CSU, UC

BIOLOGY 199
Special Studies or Projects in Biology
1-3 units, 3-9 hours
Prerequisite: Consent of instructor.
Individual study, research or projects in the field of biology under instructor guidance. Written reports and periodic conferences required. Content and unit credit to be determined by student/ instructor conferences and/or division. May be repeated for a maximum of nine units.

BIOLOGY 215 †
Statistics for Life Sciences
3 units, 2 hours lecture, 3 hours laboratory
Prerequisite: A"C"grade or higher or "Pass"in Mathematics 110 and Biology 120 or equivalent.
Methods and experience in defining and solving quantitative problems in the life sciences. Emphasis is on the design of experiments and the application of a variety of parametric and nonparametric statistical techniques to the analysis of data.
Satisfies General Education for: Grossmont College A3; CSU B4; IGETC 2A
Transfers to: CSU, UC (credit limited: see page 37)

BIOLOGY 230 †
Principles of Cellular, Molecular and Evolutionary Biology
4 units, 4 hours lecture, 2 hours laboratory
Prerequisite: A"C"grade or higher or "Pass"in Chemistry 141 or equivalent.
Recommended Preparation: A"C"grade or higher or "Pass"in Biology 120 and English 110 or equivalent.
This course surveys the general principles of biology at an advanced level. Emphasis is placed on the following topics: cellular processes including energy metabolism, membrane transport and cell cycle/cell division; molecular genetics including recombinant DNA; Mendelian and Non-Mendelian genetics; communication between cells; and the current models for cellular evolution. The course also includes laboratory exercises emphasizing the topics listed and the application of those topics to biotechnology. This course along with Biology 240 is the recommended Biology sequence for life science majors. It is suggested that students contact the anticipated transfer institution to ascertain specific transfer requirements for their major.
Satisfies General Education for Grossmont College B1; CSU B2; IGETC 5B
Transfers to: CSU, UC
† This course meets all Title 5 standards for Associate Degree Credit.

BIOLOGY 240 †
Principles of Ecology, Evolution and Organismal Biology

5 units, 4 hours lecture, 3 hours laboratory
Prerequisite: A "C" grade or higher or "Pass" in Mathematics 110 or equivalent.
Recommended Preparation: A "C" grade or higher or "Pass" in Biology 120 and English 110 or equivalent.
This course along with Biology 230 is the recommended biology sequence for life science majors. This course surveys the general principles of biology at an advanced level. Emphasis is placed on the following topics: the history of life on Earth and modern biodiversity; structures for reproduction, nutrition, respiration, transport, regulation of the internal environment, and response to the environment, the diversity of structures that perform these processes, how these structures allow adaptation to different environments and trophic roles; fundamental ecological principles, including population growth and regulation, nutrient cycling succession and interspecific interactions; human impacts on the environment; and the theory of evolution, including population genetics, the mechanisms of evolution, and the evolutionary basis of species classification. The course includes a laboratory component emphasizing the systematic and diversity of prokaryotes, protists, fungi, plants and animals, as well as activities investigating ecological and evolutionary processes using the scientific method. It is suggested that students contact the anticipated transfer institution to ascertain specific transfer requirements for their major.
Satisfies General Education for: Grossmont College B1; CSU B2; IGETC 5B
Transfers to: CSU, UC

BIOLOGY 298 ††
Selected Topics in Biology

1-3 units, 3-9 hours
Prerequisite: Varies with topic.
Selected topics in biology not covered by regular catalog offerings. Course content and unit credit to be determined by the Division of Mathematics, Natural Sciences, and Exercise Science and Wellness in relation to a community/student need(s) and/or available staff. May be offered as a seminar, lecture or laboratory class. Pass/No Pass only.
Non-associate degree applicable

BIOLOGY 299A †
Selected Topics in Biology

1-3 units, 3-9 hours
Prerequisite: Varies with topic.
Selected topics in biology not covered by regular catalog offerings. Course content and unit credit to be determined by the Division of Mathematics, Natural Sciences, and Exercise Science and Wellness in relation to a community/student need(s) and/or available staff. May be offered as a seminar, lecture or laboratory class.
Associate degree applicable

BIOLOGY 299B †
Selected Topics in Biology

1-3 units, 3-9 hours
Prerequisite: Varies with topic.
Selected topics in biology not covered by regular catalog offerings. Course content and unit credit to be determined by the Division of Mathematics, Natural Sciences, and Exercise Science and Wellness in relation to a community/student need(s) and/or available staff. May be offered as a seminar, lecture or laboratory class.
Baccalaureate level-CSU transfer

BIOLOGICAL SCIENCES

The Biological Sciences Department offers a solid academic foundation for further study in life sciences. The primary emphasis of the biological sciences major program is to prepare students for successful transfer to baccalaureate (four-year) institutions. This course package for majors is modeled on the transfer requirements of San Diego State University and will satisfy requirements of most other California State University and University of California campuses. Students should check the catalog of the transfer

Degrees offered:

Associate Degree Major Requirements

Note: All courses in the major must be completed with a letter grade of "C" or higher.

Subject & Number	Title	Units
Biology	215 Statistics for Life Sciences	3
Biology	230 Principles of Cellular, Molecular and Evolutionary Biology	4
Biology	240 Principles of Ecology, Evolution and Organismal Biology	5
Chemistry	141 General Chemistry I	5
Chemistry	142 General Chemistry II	5
Chemistry	231 Organic Chemistry I	5
Mathematics	180 Analytical Geometry and Calculus	5
Physics	130 Fundamentals of Physics	4
Physics	131 Fundamentals of Physics	4
Total Required		40
Plus General Education and Elective Requirements		

APPENDIX 3

Grade Distribution Summary Report

Grade Distribution by Division
School: Grossmont College -- Term: 2008FA -- Division: G06 -- Subject: BIO -- Course: All Courses

Section N = Night ** = Not Valid for ADA	S.T. Wks	Hrs	Enrollment	A+	A	A-	B+	B	B-	C+	C	D	F	Pass	NoPass	Inc	W	Instructor	
G06 -- Mathematics Natural Sciences Ex Sci																			
BIO-105 Life in the Sea																			
2242		4.0	23	0	6	0	0	7	0	0	6	4	0	0	0	0	9	Dudley, Gordon	PT
2243		4.0	22	0	6	0	0	5	0	0	6	5	0	0	0	0	9	Dudley, Gordon	PT
2244N		4.0	25	0	6	0	0	11	0	0	4	0	4	0	0	0	4	Meier, Deanna	PT
2245N		4.0	19	0	4	0	0	6	0	0	6	0	3	0	0	0	1	Meier, Deanna	PT
Course Total			89	0	22	0	0	29	0	0	22	9	7	0	0	0	23		
BIO-110 Environmental Biology																			
2229		4.0	21	0	7	0	0	4	0	0	4	3	3	0	0	0	5	Evans-Layng, Marit	PT
2231		4.0	26	0	6	0	0	4	0	0	8	1	5	2	0	0	3	Waayers, Gary	PT
2232		4.0	23	0	3	0	0	5	0	0	9	0	5	0	0	0	2	Waayers, Gary	PT
2234		4.0	27	0	7	0	0	8	0	0	5	2	5	0	0	0	2	Golden, Michael	
2235		4.0	35	0	9	0	0	11	0	0	9	2	1	2	1	0	2	Golden, Michael	
2236N		4.0	31	0	10	0	0	9	0	0	7	1	2	1	1	0	4	Golden, Michael	
2237N		4.0	20	0	3	0	0	5	0	0	4	2	4	2	0	0	4	Golden, Michael	
2238N		4.0	23	0	6	0	0	9	0	0	3	0	2	3	0	0	5	Golden, Michael	
8749		4.0	8	0	0	0	0	1	0	0	3	0	4	0	0	0	2	Evans-Layng, Marit	PT
Course Total			214	0	51	0	0	56	0	0	52	11	31	10	2	0	29		
BIO-112 Contemp Issues/Envir Resources																			
2239		3.0	24	0	2	0	0	5	0	0	14	2	1	0	0	0	8	Koningsor, Robert	PT
2240N		3.0	14	0	3	0	0	3	0	0	2	3	3	0	0	0	0	Winchell, Clark	PT
Course Total			38	0	5	0	0	8	0	0	16	5	4	0	0	0	8		
BIO-114 Heredity, Evolution & Society																			
2241		3.0	12	0	3	0	0	2	0	0	4	0	3	0	0	0	3	Milgrim, Craig	
Course Total			12	0	3	0	0	2	0	0	4	0	3	0	0	0	3		
BIO-118 Introduction to Human Biology																			
2246		3.0	19	0	6	0	0	4	0	0	5	0	2	2	0	0	13	Gutierrez, Rafael	PT
Course Total			19	0	6	0	0	4	0	0	5	0	2	2	0	0	13		
BIO-120 Principles of Biology																			
2247		4.0	33	0	5	0	0	4	0	0	13	1	10	0	0	0	9	Henry, Joseph	
2248		4.0	19	0	6	0	0	3	0	0	4	0	5	1	0	0	13	Henry, Joseph	
2249		4.0	29	0	1	0	0	5	0	0	7	1	15	0	0	0	13	Henry, Joseph	
2250		4.0	24	0	2	0	0	8	0	0	9	3	2	0	0	0	9	Enns, Robert	PT
2251		4.0	24	0	4	0	0	6	0	0	6	2	6	0	0	0	17	Henry, Joseph	
2252		4.0	23	0	4	0	0	5	0	0	11	0	3	0	0	0	15	Henry, Joseph	

2253	4.0	36	0	4	0	0	15	0	0	11	1	3	0	1	0	3	McJilton, William	PT
2254	4.0	31	0	6	0	0	6	0	0	11	3	3	1	1	0	9	McJilton, William	PT
2255	4.0	35	0	4	0	0	12	0	0	14	2	3	0	0	0	10	Vessel, Richard	
2256	4.0	26	0	5	0	0	5	0	0	7	9	0	0	0	0	8	Vessel, Richard	
2257	4.0	33	0	3	0	0	9	0	0	15	3	3	0	0	0	11	Vessel, Richard	
2258	4.0	37	0	4	0	0	12	0	0	15	1	3	1	1	0	9	Vessel, Richard	
2259	4.0	27	0	6	0	0	7	0	0	3	2	8	1	0	0	8	Hinton, Andrew	PT
2260	4.0	25	0	3	0	0	8	0	0	10	0	4	0	0	0	5	Ripley, Bonnie	
2261	4.0	24	0	3	0	0	10	0	0	5	1	4	1	0	0	8	Ripley, Bonnie	
2263	4.0	27	0	2	0	0	14	0	0	4	3	4	0	0	0	8	Ripley, Bonnie	
2264N	4.0	30	0	3	0	0	7	0	0	17	1	2	0	0	0	15	Howard, John	PT
2265N	4.0	37	0	3	0	0	13	0	0	15	2	3	1	0	0	7	Howard, John	PT
2266N	4.0	25	0	10	0	0	8	0	0	1	3	2	1	0	0	3	Gutierrez, Rafael	PT
2267N	4.0	29	0	9	0	0	8	0	0	7	2	3	0	0	0	9	Gutierrez, Rafael	PT
8751	4.0	24	0	4	0	0	9	0	0	4	3	3	0	0	0	14	Vessel, Richard	
8873	4.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	Henry, Joseph	
Course Total		598	0	91	0	0	174	0	0	189	43	89	7	3	0	204		
BIO-140 Human Anatomy																		
2268	5.0	18	0	3	0	0	10	0	0	4	1	0	0	0	0	15	Shearer, Allison	
2269	5.0	19	0	4	0	0	9	0	0	6	0	0	0	0	0	10	Shearer, Allison	
2270N	5.0	23	0	6	0	0	10	0	0	5	0	2	0	0	0	14	Shearer, Allison	
Course Total		60	0	13	0	0	29	0	0	15	1	2	0	0	0	39		
BIO-141 Human Physiology																		
2271	3.0	45	0	16	0	0	18	0	0	7	1	3	0	0	0	12	Caldwell, Susan	
2272	3.0	35	0	16	0	0	11	0	0	2	1	2	2	1	0	11	Caldwell, Susan	
2273N	3.0	29	0	3	0	0	7	0	0	7	8	3	1	0	0	11	Thompson, Rebecca	PT
Course Total		109	0	35	0	0	36	0	0	16	10	8	3	1	0	34		
BIO-142 Human Physiology Laboratory																		
2274	2.0	31	0	10	0	0	16	0	0	2	2	1	0	0	0	0	Caldwell, Susan	
2275	2.0	33	0	20	0	0	9	0	0	1	1	1	1	0	0	1	Caldwell, Susan	
Course Total		64	0	30	0	0	25	0	0	3	3	2	1	0	0	1		
BIO-144 Anatomy & Physiology I																		
2276	4.0	24	0	9	0	0	10	0	0	3	1	1	0	0	0	8	Alagia, Sudakshina	
2277	4.0	25	0	1	0	0	10	0	0	8	2	4	0	0	0	7	Alagia, Sudakshina	
2278	4.0	16	0	2	0	0	5	0	0	7	1	1	0	0	0	11	Alagia, Sudakshina	
2279N	4.0	22	0	14	0	0	6	0	0	2	0	0	0	0	0	10	Lowe, Franklin	PT
2280N	4.0	12	0	6	0	0	6	0	0	0	0	0	0	0	0	15	Lowe, Franklin	PT
Course Total		99	0	32	0	0	37	0	0	20	4	6	0	0	0	51		
BIO-145 Anatomy & Physiology II																		
2281	4.0	25	0	5	0	0	8	0	0	8	3	1	0	0	0	0	Alagia, Sudakshina	
2282	4.0	15	0	3	0	0	6	0	0	5	1	0	0	0	0	4	Alagia, Sudakshina	

2283N	4.0	32	0	9	0	0	10	0	0	12	0	1	0	0	0	5	Thompson, Rebecca	PT
Course Total		72	0	17	0	0	24	0	0	25	4	2	0	0	0	9		
BIO-152 Paramedical Microbiology																		
2284	5.0	22	0	15	0	0	5	0	0	2	0	0	0	0	0	7	Perchez, Michele	
2285	5.0	22	0	2	0	0	11	0	0	8	1	0	0	0	0	6	Perchez, Michele	
2286	5.0	24	0	4	0	0	13	0	0	4	3	0	0	0	0	3	Perchez, Michele	
2287N	5.0	27	0	7	0	0	9	0	0	9	0	1	1	0	0	1	Lillis, Gail	PT
2288N	5.0	24	0	6	0	0	13	0	0	5	0	0	0	0	0	4	Lillis, Gail	PT
Course Total		119	0	34	0	0	51	0	0	28	4	1	1	0	0	21		
BIO-198 Supervised Tutoring – Biology																		
2289	.0	115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Alagia, Sudakshina	
Course Total		115	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
BIO-210 Princ/Ecology & Bio Diversity																		
2290	3.0	50	0	8	0	0	17	0	0	7	3	8	2	3	0	10	Golden, Michael	XP
2291	3.0	51	0	10	0	0	13	0	0	12	3	11	0	2	0	6	Golden, Michael	XP
Course Total		101	0	18	0	0	30	0	0	19	6	19	2	5	0	16		
BIO-211 Animal Diversity & Ecology Lab																		
2292	1.0	28	0	10	0	0	11	0	0	3	4	0	0	0	0	6	Vessel, Richard	
2293	1.0	28	0	4	0	0	8	0	0	7	6	3	0	0	0	6	Vessel, Richard	
Course Total		56	0	14	0	0	19	0	0	10	10	3	0	0	0	12		
BIO-212 Plant Diversity & Ecology Lab																		
2294	1.0	21	0	4	0	0	6	0	0	6	2	2	0	0	0	2	Waayers, Gary	PT
Course Total		21	0	4	0	0	6	0	0	6	2	2	0	0	0	2		
BIO-215 Statistics for Life Sciences																		
2295	3.0	10	0	3	0	0	4	0	0	2	0	0	0	1	0	2	Ripley, Bonnie	
Course Total		10	0	3	0	0	4	0	0	2	0	0	0	1	0	2		
BIO-220 Cellular Molecular & Evol Bio																		
2296	3.0	19	0	4	0	0	8	0	0	6	1	0	0	0	0	5	Milgrim, Craig	
Course Total		19	0	4	0	0	8	0	0	6	1	0	0	0	0	5		
BIO-221 Prin Celular/Molecular Bio Lab																		
2297	1.0	18	0	4	0	0	9	0	0	4	1	0	0	0	0	4	Milgrim, Craig	
Course Total		18	0	4	0	0	9	0	0	4	1	0	0	0	0	4		
Subject Total		1833	0	386	0	0	551	0	0	442	114	181	26	12	0	476		
Division Total		1833	0	386	0	0	551	0	0	442	114	181	26	12	0	476		

Grade Distribution by Division
School: Grossmont College -- Term: 2009SP -- Division: G06 -- Subject: BIO -- Course: All Courses

Section N = Night ** = Not Valid for ADA	S.T. Wks	Hrs	Enrollment	A+	A	A-	B+	B	B-	C+	C	D	F	Pass	NoPass	Inc	W	Instructor	
BIO-105 Life in the Sea																			
6366		4.0	23	0	4	0	0	5	0	0	10	1	2	1	0	0	2	Dudley, Virginia	
6367		4.0	20	0	4	0	0	5	0	0	8	1	2	0	0	0	5	Dudley, Virginia	
6368		4.0	26	0	3	0	0	7	0	0	12	4	0	0	0	0	5	Dudley, Virginia	
6369		4.0	28	0	6	0	0	8	0	0	12	1	0	1	0	0	4	Dudley, Virginia	
6370N		4.0	18	0	0	0	0	5	0	0	13	0	0	0	0	0	9	Dudley, Gordon	PT
9130		4.0	23	0	5	0	0	6	0	0	7	1	1	2	1	0	6	Dudley, Gordon	
Course Total			138	0	22	0	0	36	0	0	62	8	5	4	1	0	31		
BIO-110 Environmental Biology																			
6353		4.0	17	0	2	0	0	5	0	0	6	2	1	0	1	0	4	Evans-Layng, Marit	PT
6354		4.0	16	0	3	0	0	6	0	0	4	1	2	0	0	0	3	Evans-Layng, Marit	PT
6356		4.0	26	0	4	0	0	8	0	0	8	3	1	2	0	0	1	Waayers, Gary	PT
6357		4.0	12	0	2	0	0	5	0	0	3	0	1	1	0	0	5	Monroe, Margo	PT
6358		4.0	24	0	7	0	0	2	0	0	6	0	4	5	0	0	5	Golden, Michael	
6359		4.0	29	0	12	0	0	10	0	0	3	0	1	3	0	0	3	Golden, Michael	
6360		4.0	39	0	13	0	0	10	0	0	9	1	0	5	1	0	0	Golden, Michael	XP
6361N		4.0	24	0	4	0	0	8	0	0	8	0	4	0	0	0	6	Golden, Michael	
6362N		4.0	23	0	8	0	0	7	0	0	6	0	1	1	0	0	7	Golden, Michael	
Course Total			210	0	55	0	0	61	0	0	53	7	15	17	2	0	34		
BIO-112 Contemp Issues/Envir Resources																			
6363		3.0	29	0	9	0	0	6	0	0	10	1	2	1	0	0	4	Koningsor, Robert	PT
6364		3.0	16	0	7	0	0	2	0	0	2	2	3	0	0	0	3	Winchell, Clark	PT
Course Total			45	0	16	0	0	8	0	0	12	3	5	1	0	0	7		
BIO-114 Heredity, Evolution & Society																			
6365		3.0	26	0	5	0	0	6	0	0	9	3	2	0	0	0	3	Furlan, Mike	PT
Course Total			26	0	5	0	0	6	0	0	9	3	2	0	0	0	3		
BIO-118 Introduction to Human Biology																			
6371		3.0	27	0	11	0	0	5	0	0	4	1	4	0	2	0	2	Gutierrez, Rafael	PT
9183		3.0	17	0	3	0	0	5	0	0	1	2	5	0	0	0	6	Caldwell, Susan	
Course Total			44	0	14	0	0	10	0	0	5	3	9	0	2	0	8		
BIO-120 Principles of Biology																			
6372		4.0	21	0	2	0	0	12	0	0	3	1	3	0	0	0	16	Henry, Joseph	XP
6373		4.0	23	0	2	0	0	6	0	0	6	2	7	0	0	0	17	Henry, Joseph	XP
6374		4.0	23	0	4	0	0	5	0	0	7	3	4	0	0	0	12	Henry, Joseph	XP

6375	4.0	24	0	3	0	0	6	0	0	11	2	2	0	0	0	10	Ripley, Bonnie	
6376	4.0	24	0	6	0	0	11	0	0	2	0	4	1	0	0	14	Hinton, Andrew	PT
6377	4.0	18	0	3	0	0	7	0	0	4	3	0	1	0	0	8	Hancock, Wendy	PT
6378	4.0	27	0	6	0	0	7	0	0	4	4	6	0	0	0	14	Henry, Joseph	
6379	4.0	23	0	4	0	0	8	0	0	2	0	9	0	0	0	22	Henry, Joseph	
6380	4.0	34	0	7	0	0	9	0	0	7	5	5	1	0	0	9	Vessel, Richard	
6381	4.0	31	0	5	0	0	11	0	0	6	5	4	0	0	0	6	Vessel, Richard	
6382	4.0	32	0	6	0	0	9	0	0	7	6	3	0	1	0	10	Vessel, Richard	
6383	4.0	33	0	3	0	0	6	0	0	8	8	4	2	2	0	11	Vessel, Richard	
6384	4.0	22	0	0	0	0	8	0	0	4	2	8	0	0	0	11	Henry, Joseph	
6385	4.0	21	0	4	0	0	5	0	0	6	0	4	1	1	0	15	Henry, Joseph	
6386	4.0	26	0	2	0	0	11	0	0	8	2	3	0	0	0	5	Ripley, Bonnie	
6387	4.0	34	0	5	0	0	10	0	0	15	3	1	0	0	0	5	Ripley, Bonnie	
6388N	4.0	36	0	2	0	0	10	0	0	21	2	1	0	0	0	8	Howard, John	PT
6389N	4.0	29	0	2	0	0	11	0	0	15	1	0	0	0	0	11	Howard, John	PT
6390N	4.0	20	0	6	0	0	5	0	0	5	1	3	0	0	0	11	Milgrim, Craig	
6391N	4.0	26	0	2	0	0	12	0	0	8	2	2	0	0	0	11	Milgrim, Craig	
8910	4.0	34	0	6	0	0	12	0	0	10	2	2	1	0	0	12	Vessel, Richard	
9323	4.0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	Henry, Joseph	
Course Total		562	0	81	0	0	181	0	0	159	54	75	7	4	0	238		
BIO-140 Human Anatomy																		
6392	5.0	19	0	4	0	0	11	0	0	4	0	0	0	0	0	13	Shearer, Allison	
6393	5.0	22	0	5	0	0	6	0	0	8	2	1	0	0	0	9	Shearer, Allison	
6394N	5.0	31	0	16	0	0	10	0	0	3	2	0	0	0	0	8	Osborne, Philip	PT
Course Total		72	0	25	0	0	27	0	0	15	4	1	0	0	0	30		
BIO-141 Human Physiology																		
6395	3.0	51	0	16	0	0	13	0	0	10	7	5	0	0	0	11	Caldwell, Susan	
6396	3.0	41	0	19	0	0	14	0	0	4	2	2	0	0	0	9	Caldwell, Susan	
6397N	3.0	24	0	5	0	0	12	0	0	3	3	1	0	0	0	10	Shearer, Allison	
Course Total		116	0	40	0	0	39	0	0	17	12	8	0	0	0	30		
BIO-142 Human Physiology Laboratory																		
6398	2.0	30	0	17	0	0	10	0	0	2	0	1	0	0	0	4	Shearer, Allison	
6399	2.0	29	0	16	0	0	11	0	0	1	1	0	0	0	0	5	Caldwell, Susan	
Course Total		59	0	33	0	0	21	0	0	3	1	1	0	0	0	9		
BIO-144 Anatomy & Physiology I																		
6400	4.0	21	0	2	0	0	8	0	0	8	1	2	0	0	0	14	Alagia, Sudakshina	
6401	4.0	27	0	7	0	0	7	0	0	4	4	4	0	1	0	10	Alagia, Sudakshina	
6402	4.0	15	0	4	0	0	7	0	0	2	1	1	0	0	0	13	Alagia, Sudakshina	
6403N	4.0	23	0	1	0	0	7	0	0	8	6	1	0	0	0	15	Thompson, Rebecca	PT
Course Total		86	0	14	0	0	29	0	0	22	12	8	0	1	0	52		
BIO-145 Anatomy & Physiology II																		

6404		4.0	29	0	7	0	0	10	0	0	8	3	1	0	0	0	2	Alagia, Sudakshina	
6405		4.0	18	0	3	0	0	8	0	0	5	1	1	0	0	0	4	Alagia, Sudakshina	
6406N		4.0	27	0	18	0	0	8	0	0	1	0	0	0	0	0	2	Lowe, Franklin	PT
6407N		4.0	23	0	15	0	0	7	0	0	0	1	0	0	0	0	6	Lowe, Franklin	PT
Course Total			97	0	43	0	0	33	0	0	14	5	2	0	0	0	14		
BIO-150 Field Study Nat Hist/San Diego																			
6408	8	3.0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	Jacobson, Gary	
Course Total			1	0	1	0	0	0	0	0	0	0	0	0	0	0	2		
BIO-152 Paramedical Microbiology																			
6409		5.0	23	0	12	0	0	11	0	0	0	0	0	0	0	0	6	Perchez, Michele	
6410		5.0	27	0	9	0	0	16	0	0	2	0	0	0	0	0	1	Perchez, Michele	
6411		5.0	26	0	3	0	0	15	0	0	6	2	0	0	0	0	2	Perchez, Michele	
6412N		5.0	27	0	4	0	0	15	0	0	8	0	0	0	0	0	1	Lillis, Gail	PT
6413N		5.0	26	0	10	0	0	12	0	0	3	1	0	0	0	0	1	Lillis, Gail	PT
Course Total			129	0	38	0	0	69	0	0	19	3	0	0	0	0	11		
BIO-198 Supervised Tutoring - Biology																			
6414	14	.0	108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Alagia, Sudakshina	
Course Total			108	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
BIO-199 Special Studies in Biology																			
6423 **		1.0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	Golden, Michael	
Course Total			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
BIO-210 Princ/Ecology & Bio Diversity																			
6415		3.0	43	0	15	0	0	11	0	0	7	5	3	0	1	0	12	Golden, Michael	
6416		3.0	47	0	17	0	0	9	0	0	14	4	1	0	0	0	9	Golden, Michael	
Course Total			90	0	32	0	0	20	0	0	21	9	4	0	1	0	21		
BIO-211 Animal Diversity & Ecology Lab																			
6417		1.0	28	0	8	0	0	8	0	0	7	1	4	0	0	0	5	Vessel, Richard	
6418		1.0	27	0	5	0	0	11	0	0	3	1	5	0	0	0	8	Vessel, Richard	
Course Total			55	0	13	0	0	19	0	0	10	2	9	0	0	0	13		
BIO-212 Plant Diversity & Ecology Lab																			
6419		1.0	27	0	9	0	0	5	0	0	10	1	1	0	1	0	4	Waayers, Gary	PT
Course Total			27	0	9	0	0	5	0	0	10	1	1	0	1	0	4		
BIO-215 Statistics for Life Sciences																			
6420		3.0	5	0	1	0	0	0	0	0	3	0	1	0	0	0	0	Ripley, Bonnie	XP
Course Total			5	0	1	0	0	0	0	0	3	0	1	0	0	0	0		
BIO-220 Cellular Molecular & Evol Bio																			
6421		3.0	16	0	6	0	0	1	0	0	5	0	4	0	0	0	4	Milgrim, Craig	
Course Total			16	0	6	0	0	1	0	0	5	0	4	0	0	0	4		
BIO-221 Prin Celular/Molecular Bio Lab																			
6422		1.0	14	0	6	0	0	4	0	0	1	2	1	0	0	0	2	Milgrim, Craig	
Course Total			14	0	6	0	0	4	0	0	1	2	1	0	0	0	2		
Subject Total			1900	0	454	0	0	569	0	0	440	129	151	29	12	0	513		

Division Total		1900	0	454	0	0	569	0	0	440	129	151	29	12	0	513			

Grade Distribution by Division
School: Grossmont College -- Term: 2009FA -- Division: G06 -- Subject: BIO -- Course: All Courses

Section N = Night ** = Not Valid for ADA	S.T. Wks	Hrs	Enrollment	A+	A	A-	B+	B	B-	C+	C	D	F	Pass	NoPass	Inc	W	Instructor	
G06 -- Mathematics Natural Sciences Ex Sci																			
BIO-105 Life in the Sea																			
2242		4.0	26	0	6	0	0	6	0	0	10	1	2	1	0	0	3	Dudley, Virginia	XP
2243		4.0	25	0	2	0	0	5	0	0	13	1	3	0	0	0	6	Dudley, Virginia	
2244		4.0	30	0	8	0	0	8	0	0	10	3	0	1	0	0	2	Dudley, Gordon	PT
2245N		4.0	24	0	5	0	0	8	0	0	8	2	0	1	0	0	10	Dudley, Gordon	PT
9540		4.0	27	0	2	0	0	3	0	0	12	3	5	1	1	0	4	Dudley, Virginia	
9541		4.0	25	0	4	0	0	6	0	0	10	2	2	0	1	0	7	Dudley, Virginia	
Course Total			157	0	27	0	0	36	0	0	63	12	12	4	2	0	32		
BIO-110 Environmental Biology																			
2231		4.0	25	0	2	2	1	1	0	1	7	5	5	1	0	0	5	Waayers, Gary	PT
2232		4.0	25	1	0	1	0	3	1	3	3	2	10	0	1	0	4	Waayers, Gary	PT
2234		4.0	25	0	4	0	2	7	0	4	3	3	1	0	0	0	7	Golden, Michael	
2235		4.0	30	0	12	0	2	10	0	0	3	1	1	1	0	0	1	Golden, Michael	
2236		4.0	28	0	12	0	2	7	0	0	3	2	0	1	1	0	6	Golden, Michael	
2237N		4.0	21	0	9	0	1	2	0	1	4	1	3	0	0	0	10	Golden, Michael	
Course Total			154	1	39	3	8	30	1	9	23	14	20	3	2	0	33		
BIO-112 Contemp Issues/Envir Resources																			
2239		3.0	32	0	6	0	0	10	0	0	13	2	1	0	0	0	7	Koningsor, Robert	PT
Course Total			32	0	6	0	0	10	0	0	13	2	1	0	0	0	7		
BIO-114 Heredity, Evolution & Society																			
2241		3.0	26	0	3	0	0	10	0	0	7	4	1	1	0	0	6	Furlan, Mike	PT
Course Total			26	0	3	0	0	10	0	0	7	4	1	1	0	0	6		
BIO-118 Introduction to Human Biology																			
2246		3.0	36	0	13	0	0	10	0	0	4	0	7	1	1	0	10	Gutierrez, Rafael	PT
9546		3.0	21	0	5	0	0	4	0	0	7	1	4	0	0	0	3	Caldwell, Susan	
Course Total			57	0	18	0	0	14	0	0	11	1	11	1	1	0	13		
BIO-120 Principles of Biology																			
2247		4.0	33	0	2	0	0	10	0	0	9	5	7	0	0	0	6	Henry, Joseph	XP
2248		4.0	24	0	2	0	0	8	0	0	3	6	5	0	0	0	15	Henry, Joseph	
2249		4.0	28	0	5	0	0	8	0	0	5	1	9	0	0	0	16	Henry, Joseph	
2251		4.0	34	0	6	0	0	12	0	0	7	4	4	0	0	0	8	Henry, Joseph	

2252	4.0	33	0	4	0	0	7	0	0	12	3	7	0	0	0	7	Henry, Joseph	
2253	4.0	36	1	4	0	0	11	0	0	15	2	3	0	0	0	2	McJilton, William	PT
2254	4.0	34	1	3	0	1	9	0	0	13	4	3	0	0	0	4	McJilton, William	PT
2255	4.0	32	0	5	0	0	7	0	0	8	7	4	1	0	0	10	Henry, Joseph	
2256	4.0	29	0	1	0	0	11	0	0	12	2	3	0	0	0	6	Ripley, Bonnie	
2257	4.0	38	0	6	0	0	9	0	0	9	3	7	2	2	0	2	Vessel, Richard	PT
2258	4.0	40	0	6	0	0	19	0	0	7	4	3	0	1	0	3	Vessel, Richard	PT
2260	4.0	30	0	4	0	0	7	0	0	10	2	7	0	0	0	5	Ripley, Bonnie	
2261	4.0	33	0	5	0	0	10	0	0	14	2	2	0	0	0	8	Ripley, Bonnie	
2263	4.0	31	0	6	0	0	13	0	0	10	0	1	0	0	0	5	Evans-Layng, Marit	PT
2264N	4.0	39	0	2	0	0	7	0	0	21	3	5	0	1	0	4	Howard, John	PT
2265N	4.0	33	0	2	0	0	7	0	0	19	1	4	0	0	0	7	Howard, John	PT
2266N	4.0	27	0	5	0	0	7	0	0	10	2	3	0	0	0	8	Milgrim, Craig	
2267N	4.0	22	0	4	0	0	3	0	0	6	5	2	2	0	0	18	Milgrim, Craig	
8751	4.0	40	0	10	0	0	9	0	0	8	7	6	0	0	0	1	Vessel, Richard	PT
9835	4.0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	Henry, Joseph	
Course Total		617	2	83	0	1	174	0	0	198	63	85	5	4	0	135		
BIO-140 Human Anatomy																		
2268	5.0	26	0	2	0	0	10	0	0	9	2	3	0	0	0	12	Shearer, Allison	XP
2269	5.0	24	0	3	0	0	4	0	0	12	4	1	0	0	0	7	Shearer, Allison	
2270N	5.0	34	0	17	0	0	11	0	0	4	1	1	0	0	0	5	Osborne, Philip	PT
Course Total		84	0	22	0	0	25	0	0	25	7	5	0	0	0	24		
BIO-141 Human Physiology																		
2271	3.0	60	0	20	0	0	16	0	0	13	8	3	0	0	0	14	Caldwell, Susan	
2272	3.0	42	0	18	0	0	15	0	0	5	1	3	0	0	0	13	Caldwell, Susan	
2273N	3.0	29	0	4	0	0	11	0	0	10	4	0	0	0	0	14	Shearer, Allison	
9547	3.0	24	0	4	0	0	14	0	0	6	0	0	0	0	0	7	Caldwell, Susan	
Course Total		155	0	46	0	0	56	0	0	34	13	6	0	0	0	48		
BIO-142 Human Physiology Laboratory																		
2274	2.0	32	0	16	0	0	14	0	0	1	0	1	0	0	0	4	Caldwell, Susan	
2275	2.0	29	0	14	0	0	12	0	0	0	1	2	0	0	0	3	Shearer, Allison	
Course Total		61	0	30	0	0	26	0	0	1	1	3	0	0	0	7		
BIO-144 Anatomy & Physiology I																		
2276	4.0	24	0	5	0	0	7	0	0	6	4	2	0	0	0	12	Alagia, Sudakshina	
2277	4.0	23	0	5	0	0	5	0	0	6	3	4	0	0	0	15	Alagia, Sudakshina	
2278	4.0	21	0	5	0	0	8	0	0	5	1	2	0	0	0	11	Alagia, Sudakshina	
2279N	4.0	21	0	6	0	0	11	0	0	3	0	1	0	0	0	13	Lowe, Franklin	PT
2280N	4.0	25	0	1	0	0	13	0	0	8	3	0	0	0	0	13	Lowe, Franklin	PT
Course Total		114	0	22	0	0	44	0	0	28	11	9	0	0	0	64		
BIO-145 Anatomy & Physiology II																		
2282	4.0	21	0	5	0	0	10	0	0	4	1	1	0	0	0	2	Alagia, Sudakshina	
2283N	4.0	32	0	9	0	0	10	0	0	7	4	2	0	0	0	5	Thompson,	PT

																	Rebecca	
Course Total		53	0	14	0	0	20	0	0	11	5	3	0	0	0	7		
BIO-152 Paramedical Microbiology																		
2284	5.0	30	0	9	0	0	14	0	0	6	0	1	0	0	0	0	Perchez, Michele	
2285	5.0	29	0	4	0	0	13	0	0	10	1	1	0	0	0	1	Perchez, Michele	
2286	5.0	29	0	2	0	0	19	0	0	8	0	0	0	0	0	1	Perchez, Michele	
2287N	5.0	28	0	7	0	0	17	0	0	4	0	0	0	0	0	0	Lillis, Gail	PT
Course Total		116	0	22	0	0	63	0	0	28	1	2	0	0	0	2		
BIO-198 Supervised Tutoring - Biology																		
2289 **	.0	92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Alagia, Sudakshina	
Course Total		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
BIO-199 Special Studies/Projects-BIO																		
9900 **	3.0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	Evans-Layng, Marit	PT
Course Total		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
BIO-210 Princ/Ecology & Bio Diversity																		
2290	3.0	43	0	5	0	3	11	0	4	3	8	9	0	0	0	12	Golden, Michael	XP
2291	3.0	42	0	12	0	3	12	0	1	3	5	6	0	0	0	8	Golden, Michael	XP
Course Total		85	0	17	0	6	23	0	5	6	13	15	0	0	0	20		
BIO-211 Animal Diversity & Ecology Lab																		
2292	1.0	32	0	5	0	0	14	0	0	9	3	1	0	0	0	2	Ripley, Bonnie	
2293	1.0	26	0	2	0	0	9	0	0	12	1	2	0	0	0	9	Ripley, Bonnie	
Course Total		58	0	7	0	0	23	0	0	21	4	3	0	0	0	11		
BIO-212 Plant Diversity & Ecology Lab																		
2294	1.0	26	0	3	0	0	10	0	0	12	1	0	0	0	0	5	Waayers, Gary	PT
Course Total		26	0	3	0	0	10	0	0	12	1	0	0	0	0	5		
BIO-220 Cellular Molecular & Evol Bio																		
2296	3.0	12	0	1	0	0	1	0	0	4	3	3	0	0	0	4	Milgrim, Craig	
Course Total		12	0	1	0	0	1	0	0	4	3	3	0	0	0	4		
BIO-221 Prin Celular/Molecular Bio Lab																		
2297	1.0	10	0	1	0	0	4	0	0	3	0	2	0	0	0	5	Milgrim, Craig	
Course Total		10	0	1	0	0	4	0	0	3	0	2	0	0	0	5		
Subject Total		1817	3	361	3	15	569	1	14	488	155	181	14	9	0	423		
Division Total		1817	3	361	3	15	569	1	14	488	155	181	14	9	0	423		

Grade Distribution by Division
School: Grossmont College -- Term: 2010SP -- Division: G06 -- Subject: BIO -- Course: All Courses

Section N = Night ** = Not Valid for ADA	S.T. Wks	Hrs	Enrollment	A+	A	A-	B+	B	B-	C+	C	D	F	Pass	NoPass	Inc	W	Instructor	
G06 -- Mathematics Natural Sciences Ex Sci																			
BIO-105 Life in the Sea																			
6366		4.0	21	0	1	0	0	4	0	0	10	3	3	0	0	0	7	Dudley, Virginia	
6367		4.0	18	0	2	0	0	4	0	0	11	1	0	0	0	0	13	Dudley, Virginia	
6368		4.0	22	0	7	0	0	7	0	0	7	0	0	1	0	0	8	Dudley, Virginia	
6369		4.0	21	0	1	0	0	2	0	0	16	2	0	0	0	0	8	Dudley, Virginia	
6370N		4.0	23	0	2	0	0	6	0	0	9	0	4	2	0	0	8	Dudley, Gordon	PT
9130		4.0	26	0	8	0	0	4	0	0	11	1	0	2	0	0	6	Dudley, Gordon	PT
Course Total			131	0	21	0	0	27	0	0	64	7	7	5	0	0	50		
BIO-110 Environmental Biology																			
6356		4.0	33	1	1	0	1	4	3	1	10	7	4	0	1	0	2	Waayers, Gary	PT
6357		4.0	30	1	1	0	0	1	2	0	7	7	11	0	0	0	3	Waayers, Gary	PT
6358		4.0	28	0	9	0	4	9	0	0	1	3	1	1	0	0	4	Golden, Michael	
6359		4.0	30	0	5	0	2	11	0	2	5	3	2	0	0	0	2	Golden, Michael	
6360		4.0	34	0	9	0	6	5	0	1	3	2	1	6	1	0	1	Golden, Michael	
6361N		4.0	29	0	5	0	4	8	0	0	6	5	1	0	0	0	3	Golden, Michael	
Course Total			184	2	30	0	17	38	5	4	32	27	20	7	2	0	15		
BIO-112 Contemp Issues/Envir Resources																			
6363		3.0	24	0	2	0	0	13	0	0	6	1	2	0	0	0	13	Koningsor, Robert	PT
Course Total			24	0	2	0	0	13	0	0	6	1	2	0	0	0	13		
BIO-114 Heredity, Evolution & Society																			
6365		3.0	24	0	7	0	0	4	0	0	6	2	4	0	1	0	7	Furlan, Mike	PT
Course Total			24	0	7	0	0	4	0	0	6	2	4	0	1	0	7		
BIO-118 Introduction to Human Biology																			
6371		3.0	18	0	6	0	0	4	0	0	3	3	2	0	0	0	11	Gutierrez, Rafael	PT
9183		3.0	20	0	1	0	0	5	0	0	3	2	9	0	0	0	6	Caldwell, Susan	
Course Total			38	0	7	0	0	9	0	0	6	5	11	0	0	0	17		
BIO-120 Principles of Biology																			
6372		4.0	30	0	10	0	0	8	0	0	8	0	4	0	0	0	13	Henry, Joseph	XP
6373		4.0	31	0	4	0	0	11	0	0	8	0	8	0	0	0	9	Henry, Joseph	XP
6374		4.0	26	0	4	0	0	10	0	0	4	2	6	0	0	0	15	Henry, Joseph	
6378		4.0	29	0	5	0	0	7	0	0	9	1	7	0	0	0	6	Henry, Joseph	
6379		4.0	26	0	4	0	0	10	0	0	7	1	4	0	0	0	17	Henry, Joseph	
6380		4.0	31	0	8	0	0	8	0	0	8	6	1	0	0	0	13	Hancock, Wendy	PT
6381		4.0	32	0	7	0	0	7	0	0	11	4	2	0	1	0	6	Hancock, Wendy	PT

6382	4.0	37	0	17	0	0	9	0	0	9	0	0	1	0	0	1	Meier, Deanna	PT
6383	4.0	39	0	20	0	0	8	0	0	5	2	3	1	0	0	3	Lynch, Sidney	PT
6384	4.0	30	0	1	0	0	5	0	0	17	5	2	0	0	0	6	McJilton, William	PT
6385	4.0	26	0	6	0	0	5	0	0	7	2	5	1	0	0	12	McJilton, William	PT
6386	4.0	28	0	4	0	0	8	0	0	14	0	1	1	0	0	6	Ripley, Bonnie	
6387	4.0	29	0	8	0	0	5	0	0	7	4	5	0	0	0	10	Ripley, Bonnie	
6388N	4.0	37	0	4	0	0	8	0	0	17	3	4	1	0	0	6	Howard, John	PT
6389N	4.0	37	0	0	0	0	13	0	0	12	3	8	1	0	0	3	Howard, John	PT
6390N	4.0	20	0	3	0	0	5	0	0	10	0	2	0	0	0	7	Milgrim, Craig	
6391N	4.0	20	0	6	0	0	8	0	0	3	2	1	0	0	0	11	Milgrim, Craig	
Course Total		508	0	111	0	0	135	0	0	156	35	63	6	1	0	144		
BIO-140 Human Anatomy																		
6392	5.0	29	0	0	0	0	10	0	3	8	2	6	0	0	0	8	Shearer, Allison	
6393	5.0	22	1	1	0	2	11	0	1	6	0	0	0	0	0	12	Shearer, Allison	
6394N	5.0	30	0	8	0	0	13	0	0	4	1	4	0	0	0	9	Osborne, Philip	PT
Course Total		81	1	9	0	2	34	0	4	18	3	10	0	0	0	29		
BIO-141 Human Physiology																		
6395	3.0	57	0	21	0	0	12	0	0	13	6	5	0	0	0	10	Caldwell, Susan	
6396	3.0	53	0	14	0	0	13	0	0	10	11	5	0	0	0	12	Caldwell, Susan	
6397N	3.0	14	0	0	0	1	7	0	0	3	1	1	0	1	0	22	Shearer, Allison	
Course Total		124	0	35	0	1	32	0	0	26	18	11	0	1	0	44		
BIO-142 Human Physiology Laboratory																		
6398	2.0	22	5	4	0	1	8	0	1	2	0	1	0	0	0	6	Shearer, Allison	
6399	2.0	35	0	26	0	0	7	0	0	2	0	0	0	0	0	2	Caldwell, Susan	
Course Total		57	5	30	0	1	15	0	1	4	0	1	0	0	0	8		
BIO-144 Anatomy & Physiology I																		
6400	4.0	28	0	5	0	0	9	0	0	6	4	4	0	0	0	10	Alagia, Sudakshina	
6401	4.0	28	0	9	0	0	12	0	0	5	1	1	0	0	0	11	Alagia, Sudakshina	
6402	4.0	17	0	3	0	0	4	0	0	5	1	4	0	0	0	17	Alagia, Sudakshina	
6403N	4.0	25	0	3	0	0	5	0	0	6	5	5	0	1	0	12	Thompson, Rebecca	PT
Course Total		98	0	20	0	0	30	0	0	22	11	14	0	1	0	50		
BIO-145 Anatomy and Physiology II																		
0005	4.0	11	0	2	0	0	7	0	0	1	1	0	0	0	0	7	Alagia, Sudakshina	
6405	4.0	29	0	10	0	0	13	0	0	5	1	0	0	0	0	2	Alagia, Sudakshina	
6406N	4.0	27	0	6	0	0	17	0	0	4	0	0	0	0	0	3	Lowe, Franklin	PT
6407N	4.0	30	0	7	0	0	18	0	0	5	0	0	0	0	0	1	Lowe, Franklin	PT
Course Total		97	0	25	0	0	55	0	0	15	2	0	0	0	0	13		
BIO-150 Field Study Nat Hist/San Diego																		
6408 ** 8	3.0	5	0	2	1	1	0	0	1	0	0	0	0	0	0	0	Jacobson, Gary	
Course Total		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
BIO-152 Paramedical Microbiology																		

6409	5.0	22	0	7	0	0	11	0	0	3	1	0	0	0	0	7	Perchez, Michele	
6410	5.0	28	0	12	0	0	10	0	0	6	0	0	0	0	0	2	Perchez, Michele	
6411	5.0	25	0	8	0	0	9	0	0	7	1	0	0	0	0	4	Perchez, Michele	
6412N	5.0	28	0	9	0	0	16	0	0	1	2	0	0	0	0	0	Lillis, Gail	PT
Course Total		103	0	36	0	0	46	0	0	17	4	0	0	0	0	13		
BIO-199 Special Studies/Projects-BIO																		
2031 **	3.0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	Dudley, Gordon	PT
2065 **	1.0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	Shearer, Allison	
Course Total		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
BIO-210 Princ/Ecology & Bio Diversity																		
6415	3.0	31	0	11	0	0	9	0	2	5	1	2	0	0	0	4	Golden, Michael	XP
6416	3.0	37	0	6	0	0	12	0	5	10	0	4	0	0	0	7	Golden, Michael	XP
Course Total		68	0	17	0	0	21	0	7	15	1	6	0	0	0	11		
BIO-211 Animal Diversity & Ecology Lab																		
6417	1.0	28	0	6	0	0	10	0	0	11	0	1	0	0	0	7	Ripley, Bonnie	
6418	1.0	30	0	5	0	0	11	0	0	11	2	0	1	0	0	5	Ripley, Bonnie	
Course Total		58	0	11	0	0	21	0	0	22	2	1	1	0	0	12		
BIO-212 Plant Diversity & Ecology Lab																		
6419	1.0	37	2	6	1	4	11	1	1	9	0	2	0	0	0	6	Waayers, Gary	PT
Course Total		37	2	6	1	4	11	1	1	9	0	2	0	0	0	6		
BIO-215 Statistics for Life Sciences																		
6420	3.0	12	0	6	0	0	4	0	0	1	1	0	0	0	0	1	Ripley, Bonnie	XP
Course Total		12	0	6	0	0	4	0	0	1	1	0	0	0	0	1		
BIO-220 Cellular Molecular & Evol Bio																		
6421	3.0	23	0	6	0	0	9	0	0	2	4	2	0	0	0	3	Milgrim, Craig	
Course Total		23	0	6	0	0	9	0	0	2	4	2	0	0	0	3		
BIO-221 Prin Celular/Molecular Bio Lab																		
6422	1.0	22	0	3	0	0	10	0	0	5	2	2	0	0	0	3	Milgrim, Craig	
Course Total		22	0	3	0	0	10	0	0	5	2	2	0	0	0	3		
Subject Total		1689	10	382	1	25	514	6	17	426	125	156	19	6	0	439		
Division Total		1689	10	382	1	25	514	6	17	426	125	156	19	6	0	439		

Grade Distribution by Division
School: Grossmont College -- Term: 2010FA -- Division: G06 -- Subject: BIO -- Course: All Courses

Section N = Night ** = Not Valid for ADA	S.T. Wks	Hrs	Enrollment	A+	A	A-	B+	B	B-	C+	C	D	F	Pass	NoPass	Inc	W	Instructor	
G06 -- Mathematics Natural Sciences Ex Sci																			
BIO-105 Life in the Sea																			
2242	4.0		29	0	5	0	0	10	0	0	12	1	1	0	0	0	5	Dudley, Virginia	XP
2243	4.0		26	0	3	0	0	8	0	0	13	0	2	0	0	0	8	Dudley, Virginia	
2244	4.0		20	0	8	0	0	7	0	0	4	0	0	1	0	0	13	Dudley, Gordon	PT
2245N	4.0		23	0	4	0	0	3	0	0	9	2	5	0	0	0	7	Dudley, Gordon	PT
9540	4.0		29	0	5	0	0	6	0	0	9	3	4	2	0	0	2	Dudley, Virginia	
9541	4.0		28	0	4	0	0	6	0	0	11	5	1	1	0	0	4	Dudley, Virginia	
Course Total			155	0	29	0	0	40	0	0	58	11	13	4	0	0	39		
BIO-110 Environmental Biology																			
2231	4.0		28	0	2	0	0	5	6	2	8	2	2	1	0	0	4	Waayers, Gary	PT
2232	4.0		31	0	3	0	0	2	0	0	6	4	15	0	1	0	5	Waayers, Gary	PT
2234	4.0		27	0	7	0	0	9	0	0	4	2	4	0	1	0	4	Golden, Michael	XP
2235	4.0		32	0	11	0	0	8	0	0	6	1	3	2	1	0	3	Golden, Michael	XP
2236	4.0		27	0	13	0	0	5	0	0	5	0	1	3	0	0	5	Golden, Michael	
2237N	4.0		24	0	5	0	0	7	0	0	3	0	9	0	0	0	7	Golden, Michael	
Course Total			169	0	41	0	0	36	6	2	32	9	34	6	3	0	28		
BIO-112 Contemp Issues/Envir Resources																			
2239	3.0		46	0	11	0	0	15	0	0	10	5	4	1	0	0	5	Golden, Michael	
Course Total			46	0	11	0	0	15	0	0	10	5	4	1	0	0	5		
BIO-114 Heredity, Evolution & Society																			
2241	3.0		28	0	7	0	0	2	0	0	8	6	5	0	0	0	4	Furlan, Mike	PT
Course Total			28	0	7	0	0	2	0	0	8	6	5	0	0	0	4		
BIO-118 Introduction to Human Biology																			
9546	3.0		14	0	3	0	0	3	0	0	3	3	2	0	0	0	9	Caldwell, Susan	
Course Total			14	0	3	0	0	3	0	0	3	3	2	0	0	0	9		
BIO-120 Principles of Biology																			
2247	4.0		31	0	6	0	0	10	0	0	8	3	3	1	0	0	5	Lynch, Sidney	PT
2248	4.0		27	0	2	0	0	5	0	0	5	7	7	1	0	0	9	Lynch, Sidney	PT
2249	4.0		33	0	6	0	0	12	0	0	10	0	4	1	0	0	3	Lynch, Sidney	PT
2251	4.0		29	0	2	0	0	13	0	0	14	0	0	0	0	0	8	Evans-Layng, Marit	PT
2252	4.0		29	0	4	0	0	14	0	0	10	0	1	0	0	0	7	Evans-Layng, Marit	PT
2253	4.0		35	0	4	0	0	10	0	0	13	6	0	2	0	0	2	McJilton, William	PT
2254	4.0		35	0	6	0	0	9	0	0	13	4	3	0	0	0	3	McJilton, William	PT
2255	4.0		34	0	11	0	0	12	0	0	6	3	2	0	0	0	5	Monroe, Margo	PT

2256	4.0	27	0	13	0	0	4	0	0	4	2	4	0	0	0	11	Monroe, Margo	PT
2260	4.0	32	0	4	0	0	8	0	0	11	6	3	0	0	0	7	Ripley, Bonnie	
2261	4.0	33	0	3	0	0	7	0	0	14	4	5	0	0	0	9	Ripley, Bonnie	
2264N	4.0	32	0	5	0	0	8	0	0	16	0	1	2	0	0	7	Howard, John	PT
2265N	4.0	35	0	3	0	0	13	0	0	13	1	5	0	0	0	5	Howard, John	PT
2266N	4.0	26	0	3	0	0	6	0	0	10	1	6	0	0	0	11	Milgrim, Craig	
2267N	4.0	22	0	5	0	0	7	0	0	5	0	5	0	0	0	15	Milgrim, Craig	
Course Total		460	0	77	0	0	138	0	0	152	37	49	7	0	0	107		
BIO-140 Human Anatomy																		
2268	5.0	14	0	2	0	0	1	0	2	4	3	2	0	0	0	17	Shearer, Allison	XP
2269	5.0	21	0	2	0	0	4	0	2	8	5	0	0	0	0	15	Shearer, Allison	
2270N	5.0	25	0	9	0	0	12	0	0	2	2	0	0	0	0	11	Osborne, Philip	PT
Course Total		60	0	13	0	0	17	0	4	14	10	2	0	0	0	43		
BIO-141 Human Physiology																		
2271	3.0	60	0	27	0	0	17	0	0	12	3	1	0	0	0	10	Caldwell, Susan	
2272	3.0	56	0	14	0	0	16	0	0	18	6	2	0	0	0	15	Caldwell, Susan	
2273N	3.0	24	0	2	0	1	4	0	0	15	2	0	0	0	0	18	Shearer, Allison	
9547	3.0	25	0	1	0	0	6	0	0	11	4	3	0	0	0	4	Caldwell, Susan	
Course Total		165	0	44	0	1	43	0	0	56	15	6	0	0	0	47		
BIO-142 Human Physiology Laboratory																		
2274	2.0	33	0	13	0	0	11	0	0	6	2	1	0	0	0	1	Caldwell, Susan	
2275	2.0	22	3	9	0	2	3	0	0	3	1	1	0	0	0	3	Shearer, Allison	
Course Total		55	3	22	0	2	14	0	0	9	3	2	0	0	0	4		
BIO-144 Anatomy & Physiology I																		
2276	4.0	21	0	4	0	0	7	0	0	5	3	2	0	0	0	14	Alagia, Sudakshina	
2277	4.0	32	0	7	0	0	12	0	0	9	1	3	0	0	0	7	Alagia, Sudakshina	
2278	4.0	15	0	3	0	0	6	0	0	4	2	0	0	0	0	17	Alagia, Sudakshina	
2280N	4.0	34	0	6	0	0	16	0	0	7	3	2	0	0	0	8	Lowe, Franklin	PT
Course Total		102	0	20	0	0	41	0	0	25	9	7	0	0	0	46		
BIO-145 Anatomy & Physiology II																		
2282	4.0	18	0	4	0	0	9	0	0	4	0	1	0	0	0	1	Alagia, Sudakshina	
2283N	4.0	28	0	7	0	0	10	0	0	8	2	1	0	0	0	2	Thompson, Rebecca	PT
5394	4.0	29	0	15	0	0	8	0	0	4	2	0	0	0	0	1	Alagia, Sudakshina	
Course Total		75	0	26	0	0	27	0	0	16	4	2	0	0	0	4		
BIO-152 Paramedical Microbiology																		
2284	5.0	27	0	5	0	0	16	0	0	6	0	0	0	0	0	2	Perchez, Michele	
2285	5.0	27	0	7	0	0	12	0	0	7	1	0	0	0	0	3	Perchez, Michele	
2286	5.0	27	0	5	0	0	14	0	0	7	1	0	0	0	0	2	Perchez, Michele	
2287N	5.0	29	0	6	0	0	17	0	0	5	1	0	0	0	0	0	Lillis, Gail	PT
Course Total		110	0	23	0	0	59	0	0	25	3	0	0	0	0	7		
BIO-180 Ecology, Evol & Bio Diversity																		

5395	3.0	16	0	5	2	0	3	0	0	3	1	2	0	0	0	11	Waayers, Gary	PT
Course Total		16	0	5	2	0	3	0	0	3	1	2	0	0	0	11		
BIO-199 Special Studies/Projects-BIO																		
6304 **	3.0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	Dudley, Gordon	PT
6312 **	1.0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	Shearer, Allison	
Course Total		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
BIO-230 Princ Cellu/Moleculr/Evolu Bio																		
5396	4.0	14	0	1	0	0	5	0	0	2	4	2	0	0	0	6	Milgrim, Craig	
Course Total		14	0	1	0	0	5	0	0	2	4	2	0	0	0	6		
BIO-240 Ecol, Evolut & Organismal Bio																		
5397	5.0	27	0	1	0	0	11	0	0	11	2	2	0	0	0	11	Ripley, Bonnie	
Course Total		27	0	1	0	0	11	0	0	11	2	2	0	0	0	11		
Subject Total		1496	3	323	2	3	454	6	6	424	122	132	18	3	0	371		
Division Total		1496	3	323	2	3	454	6	6	424	122	132	18	3	0	371		

Grade Distribution by Division
School: Grossmont College -- Term: 2011SP -- Division: G06 -- Subject: BIO -- Course: All Courses

Section N = Night ** = Not Valid for ADA	S.T. Wks	Hrs	Enrollment	A+	A	A-	B+	B	B-	C+	C	D	F	Pass	NoPass	Inc	W	Instructor	
G06 -- Mathematics Natural Sciences Ex Sci																			
BIO-105 Life in the Sea																			
6366		4.0	21	0	1	0	0	6	0	0	13	0	1	0	0	0	4	Dudley, Virginia	XP
6367		4.0	26	0	3	0	0	3	0	0	14	3	3	0	0	0	6	Dudley, Virginia	
6368		4.0	22	0	4	0	0	4	0	0	12	2	0	0	0	0	6	Dudley, Virginia	
6369		4.0	24	0	2	0	0	5	0	0	10	2	3	2	0	0	8	Dudley, Virginia	
6370N		4.0	22	0	10	0	0	5	0	0	3	0	4	0	0	0	4	Meier, Deanna	PT
9130N		4.0	26	0	7	0	0	7	0	0	4	5	3	0	0	0	5	Meier, Deanna	PT
Course Total			141	0	27	0	0	30	0	0	56	12	14	2	0	0	33		
BIO-110 Environmental Biology																			
6356		4.0	28	1	2	0	0	1	2	3	6	4	8	0	1	0	4	Waayers, Gary	PT
6357		4.0	22	1	1	0	3	1	2	0	5	2	7	0	0	0	7	Waayers, Gary	PT
6358		4.0	31	0	8	0	0	10	0	0	9	2	2	0	0	0	0	Golden, Michael	
6359		4.0	28	0	10	0	0	9	0	0	5	0	3	1	0	0	4	Golden, Michael	
6360		4.0	30	0	11	2	1	6	0	3	6	0	1	0	0	0	2	Golden, Michael	XP
6361N		4.0	25	0	4	0	0	10	0	0	6	5	0	0	0	0	5	Golden, Michael	
Course Total			164	2	36	2	4	37	4	6	37	13	21	1	1	0	22		

BIO-112 Contemp Issues/Envir Resources																		
6363	3.0	52	0	10	1	6	8	0	6	7	8	5	1	0	0	6	Golden, Michael	
Course Total		52	0	10	1	6	8	0	6	7	8	5	1	0	0	6		
BIO-114 Heredity, Evolution & Society																		
6365	3.0	22	0	2	0	0	5	0	0	4	5	6	0	0	0	7	Furlan, Mike	PT
Course Total		22	0	2	0	0	5	0	0	4	5	6	0	0	0	7		
BIO-118 Introduction to Human Biology																		
9183	3.0	20	0	2	0	0	8	0	0	6	3	1	0	0	0	7	Caldwell, Susan	
Course Total		20	0	2	0	0	8	0	0	6	3	1	0	0	0	7		
BIO-120 Principles of Biology																		
6372	4.0	30	0	8	0	0	8	0	0	11	1	2	0	0	0	6	Lynch, Sidney	PT
6373	4.0	32	0	2	0	0	13	0	0	14	3	0	0	0	0	4	Lynch, Sidney	PT
6374	4.0	31	0	12	0	0	11	0	0	3	5	0	0	0	0	5	Lynch, Sidney	PT
6378	4.0	32	0	2	0	0	13	0	0	10	3	4	0	0	0	6	Evans-Layng, Marit	PT
6379	4.0	36	0	5	0	0	8	0	0	18	2	2	1	0	0	3	Evans-Layng, Marit	PT
6382	4.0	34	0	4	0	0	19	0	0	7	3	1	0	0	0	3	Monroe, Margo	PT
6383	4.0	33	0	8	0	0	10	0	0	10	3	1	1	0	0	3	Monroe, Margo	PT
6384	4.0	35	0	7	0	0	13	0	1	6	5	3	0	0	0	3	McJilton, William	PT
6385	4.0	37	0	7	0	0	6	0	1	16	5	2	0	0	0	2	McJilton, William	PT
6386	4.0	29	0	1	0	0	14	0	0	9	3	2	0	0	0	4	Ripley, Bonnie	
6387	4.0	30	0	1	0	0	10	0	0	13	3	3	0	0	0	3	Ripley, Bonnie	
6388N	4.0	39	0	2	0	0	12	0	0	20	1	3	1	0	0	7	Howard, John	PT
6389N	4.0	35	0	3	0	0	6	0	0	17	4	4	1	0	0	7	Howard, John	PT
6390N	4.0	22	0	2	0	0	8	0	0	6	2	3	1	0	0	12	Milgrim, Craig	
6391N	4.0	30	0	1	0	0	7	0	0	13	3	6	0	0	0	6	Milgrim, Craig	
Course Total		485	0	65	0	0	158	0	2	173	46	36	5	0	0	74		
BIO-140 Human Anatomy																		
6392	5.0	24	2	3	0	0	9	0	0	5	2	3	0	0	0	12	Shearer, Allison	
6393	5.0	22	1	0	0	0	9	0	1	6	2	3	0	0	0	9	Shearer, Allison	
6394N	5.0	27	0	3	0	0	14	0	0	6	1	3	0	0	0	6	Osborne, Philip	PT
Course Total		73	3	6	0	0	32	0	1	17	5	9	0	0	0	27		
BIO-141 Human Physiology																		
6395	3.0	61	0	21	0	0	20	0	0	10	5	5	0	0	0	5	Caldwell, Susan	
6396	3.0	54	0	17	0	0	14	0	0	15	4	4	0	0	0	10	Caldwell, Susan	
6397N	3.0	18	0	0	0	0	6	0	0	7	4	1	0	0	0	25	Shearer, Allison	
Course Total		133	0	38	0	0	40	0	0	32	13	10	0	0	0	40		
BIO-142 Human Physiology Laboratory																		
6398	2.0	17	1	7	0	0	3	0	0	5	0	1	0	0	0	0	Shearer, Allison	
6399	2.0	38	0	16	0	0	11	0	0	5	1	5	0	0	0	3	Caldwell, Susan	
Course Total		55	1	23	0	0	14	0	0	10	1	6	0	0	0	3		
BIO-144 Anatomy & Physiology I																		
6400	4.0	29	0	7	0	0	7	0	0	6	5	4	0	0	0	6	Alagia, Sudakshina	

6401		4.0	26	0	5	0	0	8	0	0	3	6	4	0	0	0	12	Alagia, Sudakshina	
6402		4.0	19	0	5	0	0	8	0	0	5	0	1	0	0	0	7	Alagia, Sudakshina	
6403N		4.0	28	0	7	0	0	6	0	0	9	3	3	0	0	0	4	Thompson, Rebecca	PT
Course Total			102	0	24	0	0	29	0	0	23	14	12	0	0	0	29		
BIO-145 Anatomy & Physiology II																			
6405		4.0	23	0	8	0	0	11	0	0	4	0	0	0	0	0	3	Alagia, Sudakshina	
6406		4.0	18	0	8	0	0	5	0	0	4	1	0	0	0	0	1	Alagia, Sudakshina	
6407N		4.0	30	0	16	0	0	13	0	0	1	0	0	0	0	0	6	Lowe, Franklin	PT
Course Total			71	0	32	0	0	29	0	0	9	1	0	0	0	0	10		
BIO-150 Field Study Nat Hist/San Diego																			
6408 **	8	3.0	3	0	0	2	0	0	0	0	1	0	0	0	0	0	1	Jacobson, Gary	
Course Total			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
BIO-152 Paramedical Microbiology																			
6409		5.0	27	0	10	0	0	9	0	0	7	1	0	0	0	0	3	Perchez, Michele	
6410		5.0	27	0	7	0	0	15	0	0	4	0	1	0	0	0	3	Perchez, Michele	
6411		5.0	29	0	9	0	0	10	0	0	5	0	5	0	0	0	0	Perchez, Michele	
6412N		5.0	28	0	7	0	0	18	0	0	2	0	1	0	0	0	0	Lillis, Gail	PT
Course Total			111	0	33	0	0	52	0	0	18	1	7	0	0	0	6		
BIO-180 Ecology, Evol & Bio Diversity																			
5877		3.0	19	1	2	1	0	3	0	0	7	0	4	1	0	0	8	Waayers, Gary	PT
Course Total			19	1	2	1	0	3	0	0	7	0	4	1	0	0	8		
BIO-215 Statistics for Life Sciences																			
6420		3.0	11	0	5	0	0	3	0	0	1	2	0	0	0	0	3	Ripley, Bonnie	
Course Total			11	0	5	0	0	3	0	0	1	2	0	0	0	0	3		
BIO-230 Princ Cellu/Moleculr/Evolu Bio																			
5878		4.0	18	0	2	0	0	8	0	0	2	3	3	0	0	0	8	Milgrim, Craig	
Course Total			18	0	2	0	0	8	0	0	2	3	3	0	0	0	8		
BIO-240 Ecol, Evolut & Organismal Bio																			
5880		5.0	27	0	8	0	0	9	0	0	6	3	1	0	0	0	7	Ripley, Bonnie	
Course Total			27	0	8	0	0	9	0	0	6	3	1	0	0	0	7		
Subject Total			1504	7	315	4	10	465	4	15	408	130	135	10	1	0	290		
Division Total			1504	7	315	4	10	465	4	15	408	130	135	10	1	0	290		

APPENDIX 4
Annual Progress Reports

Course #	Bio 144
SLO Assessed	1. Students will be able to identify proteins components of a plasma membrane. 2. Students will be able to describe each protein component and its function within the plasma membrane. 3. Students will be able to critically think and apply the previous information to deduce the specific locations of each protein component.

Course #	Bio 105
SLO Assessed	Draw depictions of oceanographic conditions and describe the affect of these conditions on the distribution of plants and animals in ocean basins.

APPENDIX 5

SLO Assessment Analyses

Course #	Bio 144
SLO Assessed (please cut and paste the wording of the SLO into the appropriate cell)	1. Students will be able to identify proteins components of a plasma membrane. 2. Students will be able to describe each protein component and its function within the plasma membrane. 3. Students will be able to critically think and apply the previous information to deduce the specific locations of each protein component.
Assessment Assignments and/or Instruments: Which were used to assess the SLO? (Department Chair should save any instruments used for assessment (rubrics, surveys, etc.) onto shared department drive or Blackboard site	☒Item analysis of exams, quizzes, problem sets, etc. (items linked to specific outcomes) ☐Assignments based on rubrics (essays/reports, projects, performance analysis) ☐Assignments based on checklists ☐Direct Observation of performances, structured practices or drills, practical exams, small group work, etc. ☐Student Self-Assessments (reflective journals, surveys) ☐Classroom Assessment Techniques (CATS, "clicker" mediated responses, etc.) ☐Capstone projects of final summative assessment (final exams, capstone projects, portfolios, etc.) ☐Student Satisfaction Survey ☐Student/Administrative/ Instructional Service area Data Collection (for SSOs/ASOs/ISOs) ☐Other (please describe):
Assessment Analysis (Please write a narrative on the following: What did you learn from the assessment of the outcomes? (i.e. In which areas did students excel? What issues and needs were revealed?) Did the assessment work, and if not, what needs to be revised?	The SLO was assessed as part of lecture exam. A total of 35 students participated in the assessment. Majority of the students were able to answer the part 1 of the assessment. The results fell within the expected and acceptable parameters. Students that successfully answered the first part of the question: 31 (88.5%). Fewer students were able to successfully answer this part of the assessment. The results were expected as this part of the SLO required descriptive skills from students and therefore, was of greater challenge to the students. Students that successfully answered the second part of the question: 25 (71.5%) This part was answered by least number of students. Given the fact that this part of the SLO did require critical thinking from students, only those that were able to critically think and apply previous info could succeed in this part of the assessment. Students that successfully answered the third part of the question: 16.5 (47%)
Action Plan	☐Conduct further assessment related to the issue and outcome ☒Conduct according to the schedule with no changes made to the assessment or SLO ☐Use new or revised teaching methods (i.e. more use of group work, new lecture, etc.), such as: _____ ☐Develop new methods of evaluating student work, such as: _____ ☐Plan purchase of new equipment or supplies needed for modified student activities, such as: _____ ☐Make changes in staffing plans (i.e. modified job descriptions, requests for new positions, etc.) ☐Engage in professional development about best practices for this type of class/activity ☐Revise the course sequence or prerequisites ☐Revise the course syllabus or outline (i.e. change in course topics) ☐Revise the SLO ☐Unable to determine what should be done ☐Other (please describe):
Semester when Next Assessment of this SLO Outcome will take place	☐Fall OR ☒Spring Year: 2010

Course # Bio 105	
SLO Assessed (please cut and paste the wording of the SLO into the appropriate cell)	Draw depictions of oceanographic conditions and describe the affect of these conditions on the distribution of plants and animals in ocean basins.
Assessment Assignments and/or Instruments: Which were used to assess the SLO? (Department Chair should save any instruments used for assessment (rubrics, surveys, etc.) onto shared department drive or Blackboard site	X Item analysis of exams, quizzes, problem sets, etc. (items linked to specific outcomes) ☐ Assignments based on rubrics (essays/reports, projects, performance analysis) ☐ Assignments based on checklists ☐ Direct Observation of performances, structured practices or drills, practical exams, small group work, etc. ☐ Student Self-Assessments (reflective journals, surveys) ☐ Classroom Assessment Techniques (CATS, "clicker" mediated responses, etc.) ☐ Capstone projects of final summative assessment (final exams, capstone projects, portfolios, etc.) ☐ Student Satisfaction Survey ☐ Student/Administrative/ Instructional Service area Data Collection (for SSOs/ASOs/ISOs) ☐ Other (please describe):
Assessment Analysis (Please write a narrative on the following: What did you learn from the assessment of the outcomes? (i.e. In which areas did students excel? What issues and needs were revealed?) Did the assessment work, and if not, what needs to be revised?	The average score was 67% or "C". The two sections differed by 20 percentage points but the sample size is too small to know if the difference is significant. The averaged score is a better indicator I think than either score for the individual sections. I was pleased with the result on this SLO assessment.
Action Plan	☐ Conduct further assessment related to the issue and outcome X Conduct according to the schedule with no changes made to the assessment or SLO ☐ Use new or revised teaching methods (i.e. more use of group work, new lecture, etc.), such as: _____ ☐ Develop new methods of evaluating student work, such as: _____ ☐ Plan purchase of new equipment or supplies needed for modified student activities, such as: _____ ☐ Make changes in staffing plans (i.e. modified job descriptions, requests for new positions, etc.) ☐ Engage in professional development about best practices for this type of class/activity ☐ Revise the course sequence or prerequisites ☐ Revise the course syllabus or outline (i.e. change in course topics) ☐ Revise the SLO ☐ Unable to determine what should be done ☐ Other (please describe):
Semester when Next Assessment of this SLO Outcome will take place	☐ Fall OR X Spring Year:2016

APPENDIX 6
Course-to-Program SLO Mapping Document

Complete Mapping: CSLOs to PSLOs - Biology Department

Course	SLO	1. Demonstrate an understanding of Evolution by Natural Selection (SI1, 4)	2. Analyze and interpret (evaluate) experimental data in order to determine relationships between biological processes. (SI1,3,5)	3. Apply the Scientific Method to experimental design and data analysis (SI1,2,3)	4. Examine the homeostatic processes within living cells and organisms (SI1,5)	5. Demonstrate an understanding of modern systematic principles. (SI1,5)	6. Predict how changes in biotic and abiotic components affect ecosystem dynamics (SI1,2,5)
105	Examine characteristics of organisms observed and predict the adaptive value of those traits.						X
	Draw depictions of oceanographic conditions and describe the affect of these conditions on the distribution of plants and animals in ocean basins				X		
110	Given several specific resources, explain the relationship between the use of those resources and their associated impact(s) on the environment.		X				
	Describe the components of an ecosystem		X		X		X
112	Diagram the pathway for energy as it enters the biosphere, is fixed by autotrophs, moves within and between trophic levels and finally exits to the atmosphere.						X
114	Students will be able to identify the major Biological Events in Geological Time				X		
	Students will be able to calculate allele frequencies from population data			X			
118	Define and distinguish between the scientific method of investigation and other ways of knowing things.			X			
	List at least three types of evidence that have lead to the Theory of Organic Evolution.	X					
	Given an observation of a disruption in homeostasis, student will be able to identify the three parts of the negative feedback involved, and how homeostasis is restored in the body.				X		
	Describe the physiological effects of long-term sympathetic nervous system stimulation on the human body.				X		
120	Be able to define the terms diffusion and osmosis.					X	
	Be able to explain the relationship between molecular weight and the rate of a molecule's diffusion.		X		X	X	

	Be able to describe how the solute concentration, inside of a cell, effects the rate (speed) of osmosis.		X		X	X	
	Be able to describe how the solute concentration, inside of a cell, effects the rate (speed) of osmosis.				X	X	
140	Explain the interrelationship between structure and function.		X		X	X	
	Trace the pathway of blood through the heart and identify the relative oxygen content of the blood in each chamber.				X		
	Compare and identify the developmental outcomes of the three cell layers in the embryonic inner cell mass.				X	X	
141	Describe factors that contribute to denaturation in enzymes		X		X	X	
	Given an observation of a disruption in homeostasis, student will be able to identify the body receptor, control center, and effector involved, and using this information to draw a diagram and write a statement as to how the body restores homeostasis.		X		X	X	
	Describe the physiological effects of long-term sympathetic nervous system stimulation on five organ systems.		X		X	X	
142	Given an observation, student will write a hypothesis, design an experiment with control and experimental variables, collect and analyze data, graph the results, and interpret the result in the terms of the experimental question.		X		X	X	
	Define systolic and diastolic pressure		X		X	X	
	Construct and label Cartesian graphs, frequency tables, pie charts and scatter plot graphs, given a table of data with two variables.		X		X	X	
144	Students will be able to list types of membrane proteins according to their functions			X			
	Using a 1-2 sentences, students will be able to describe the functions of membrane proteins					X	
	Students will be able to apply information on membrane proteins to discuss locations of these proteins. i.e. mention for each protein whether it's peripheral or integral.				X		
145	Define Dalton's law of partial pressure					X	
	Describe gas diffusion during respiratory stages according to Dalton's law of partial pressure.					X	
	Apply the concept of Dalton's Law of Partial Pressure to specific situations that can be explained by using this concept, like deviation from normal gas diffusion under altered parameters.					X	

152	Create a pure culture from a mixed bacterial sample					X	
	Perform a successful Gram stain					X	
	Identify cell shape and arrangement of a bacterial sample					X	
180	Define and distinguish between the Scientific method and other ways of knowing things					X	
	Understand the theory of organic evolution				X		
	Understand the importance of the sun's energy to life on earth				X		
198	**<Supervised Tutoring>: will be assessed when offered-- not currently being offered**						
	Students will be able to recognize essential skills and content and apply them to a related Biology course.				X	X	
199	**<Special Projects>: will be assessed when offered-- not currently being offered**						
	Students will be able to identify, examine, and assess a component in the field of Biology in a study of individualized content.					X	
215	Calculate the mean and standard deviation of a set of data					X	
	Make and interpret the meaning of a histogram			X			
	Understand the meaning of probability	X					
	State the definition of a P-value				X		
	Correctly use the term "statistically significant"				X		
	Recognize the situations where different statistical tests covered in class are used				X		
230	Students will be able to describe and diagram the process of Iron uptake in Eukaryotic Cells		X			X	
	Students will be able to analyze an article from the Primary Literature and participate in a direct-discussion the data presented in the article		X				
	Students will analyze quantitative data on the effect of Temperature on Amylase activity					X	
	Students will formulate general conclusions about enzyme activity and structure based on quantitative data.		X			X	
	Students will analyze plasmid vector and insert sequence size and restriction data and produce a composite map of the ligated construct		X				
	Students will create a flowchart of a written Transformation protocol		X				
	Students will demonstrate an understanding of the role of Controls in Transformation protocols		X				

240	Sketch and explain the cycle of nutrients in the ecosystem and flow of energy		X				
	Outline the history of life on earth and sketch the tree of life, showing major evolutionary events;				X		
	List and explain the functions of the major body systems in plants and animals and their role in homeostasis and metabolism		X				
	Describe how evolution works by the process of natural selection and how this explains both the unity and diversity of life	X					
298	Selected Topics in Biology (Basic Skills): will be assessed when offered-- not currently being offered						
	Students will be able to describe, distinguish and apply components of Biology within a specialized topic in the field of Biology		X				
299 A & B	**Selected Topics in Biology (A-Associate Degree applicable; B-Baccalaureate-CSU transfer): will be assessed when offered-- not currently being offered**						
	Students will be able to describe, distinguish and apply components of Biology within a specialized topic in the field of Biology		X				

APPENDIX 7

Student Survey

Grossmont College
Biology
Spring 2012
N=246
Response Rate 17.3%

Q1. What is your primary reason for taking this class?

	Frequency	Percent
Required for major	104	42.3
Prerequisite	67	27.2
General education requirement	50	20.3
Transfer	15	6.1
General interest	8	3.3
Improve job skills	2	.8
Total	**246**	**100.0**

Q2. How did you find out about this class?

	Frequency	Percent
Class schedule or college catalog	176	71.8
Grossmont College counselor	54	22.0
Other student recommendation	11	4.5
Friend or family member	3	1.2
Instructor	1	.4
Total	**245**	**100.0**
No Response	1	
Total	246	

Q3. How many courses have you taken in this department at Grossmont College? (Including this current course and any repeated courses)

	Frequency	Percent
One	106	43.1
Two	75	30.5
Three	26	10.6
More than three	39	15.9
Total	**246**	**100.0**

Q4. This class was delivered?

	Frequency	Percent
In a traditional classroom setting	231	93.9
As a hybrid (part in classroom/part online)	14	5.7
Online (100%)	1	.4
Total	**246**	**100.0**

Q5. What modes of communication are made available to you by your instructor?

	Frequency	Percent
Face to Face	232	94.3
Email	215	87.4
Telephone/Voice Mail	89	36.2

*Note: Since respondents are able to select more than one option, the total percent may not equal 100. Percentage is based on the total number of students responding to this item (i.e., 246).

Q6. Which of the following do you check most frequently for course information and/or messages?

	Frequency	Percent
Blackboard announcements	98	39.8
Email	75	30.5
Instructor	73	29.7
Total	**246**	**100.0**

Q7. When I have questions or need to talk about course content or assignments, I usually meet/talk to my instructor:

	Frequency	Percent
Before or after my class meets	142	57.7
Via email	61	24.8
During office hours/ appointment	43	17.5
Total	**246**	**100.0**

Q8. Who else or what else do you primarily turn to for extra help?

	Frequency	Percent
Current classmates	125	51.7
Text book	50	20.7
Tutor	37	15.3
Website(s)	25	10.3
Family member	5	2.1
Total	**242**	**100.0**
No Response	4	
Total	246	

Q9. Which of the following course resources helped you learn the course material?

	Frequency	Percent
Lecture	206	83.7
Textbook	156	63.4
PowerPoint slides	154	62.6
Homework/Assignments	130	52.8
Quizzes	108	43.9
Course Blackboard site	98	39.8
Handouts	89	36.2
Study groups	91	37.0
Group work in class	86	35.0
Videos/dvds	55	22.4
Computer Presentations	47	19.1
Instructor website	41	16.7
None of the above	9	3.7

*Note: Since respondents are able to select more than one option, the total percent may not equal 100. Percentage is based on the total number of students responding to this item (i.e., 246).

Q10. Have you used one or more of the following campus resources to assist you with a course(s) in this department?

	Frequency	Percent
Yes	150	61.0
No	96	39.0
Total	**246**	**100.0**

*Note: Campus resources include: Assessment and Testing Center, English Writing Lab, Tech Mall, Library (online resources), On-Campus Library, Math Study, Tutoring Center, DSPS, EOPS, Department Computer Labs, and Blackboard Help Line.

Q11_a. For each of the following campus resources you have used, please indicate if you were required to use or voluntarily used the campus resource: Assessment and Testing Center

	Frequency	Percent
Required	35	23.3
Voluntary	25	16.7
Never Used	90	60.0
Total	**150**	**100.0**
No Response	96	
Total	246	

Q12_a. Please indicate the helpfulness of each campus resource you have used: Assessment and Testing Center

	Frequency	Percent
Very Helpful	29	19.3
Helpful	31	20.7
Neither Helpful nor Unhelpful	11	7.3
Somewhat Unhelpful	1	.7
Never Used	78	52.0
Total	**150**	**100.0**
No Response	96	
Total	246	

Q11_b. For each of the following campus resources you have used, please indicate if you were required to use or voluntarily used the campus resource: English Writing Lab

	Frequency	Percent
Required	22	14.7
Voluntary	39	26.0
Never Used	89	59.3
Total	**150**	**100.0**
No Response	96	
Total	246	

Q12_b. Please indicate the helpfulness of each campus resource you have used: English Writing Lab

	Frequency	Percent
Very Helpful	37	24.7
Helpful	19	12.7
Neither Helpful nor Unhelpful	8	5.3
Somewhat Unhelpful	3	2.0
Very Unhelpful	1	.7
Never Used	82	54.7
Total	**150**	**100.0**
No Response	96	
Total	246	

Q11_c. For each of the following campus resources you have used, please indicate if you were required to use or voluntarily used the campus resource: Tech Mall

	Frequency	Percent
Required	7	4.7
Voluntary	112	74.7
Never Used	31	20.7
Total	**150**	**100.0**
No Response	96	
Total	246	

Q12_c. Please indicate the helpfulness of each campus resource you have used: Tech Mall

	Frequency	Percent
Very Helpful	72	48.0
Helpful	32	21.3
Neither Helpful nor Unhelpful	11	7.3
Somewhat Unhelpful	1	.7
Very Unhelpful	2	1.3
Never Used	32	21.3
Total	**150**	**100.0**
No Response	96	
Total	246	

Q11_d. For each of the following campus resources you have used, please indicate if you were required to use or voluntarily used the campus resource: Library (online resources)

	Frequency	Percent
Required	41	27.3
Voluntary	76	50.7
Never Used	33	22.0
Total	**150**	**100.0**
No Response	96	
Total	246	

Q12_d. Please indicate the helpfulness of each campus resource you have used: Library (onlines resources)

	Frequency	Percent
Very Helpful	63	42.0
Helpful	43	28.7
Neither Helpful nor Unhelpful	10	6.7
Somewhat Unhelpful	3	2.0
Very Unhelpful	1	.7
Never Used	30	20.0
Total	**150**	**100.0**
No Response	96	
Total	246	

Q11_e. For each of the following campus resources you have used, please indicate if you were required to use or voluntarily used the campus resource: On-Campus Library

	Frequency	Percent
Required	18	12.0
Voluntary	107	71.3
Never Used	25	16.7
Total	**150**	**100.0**
No Response	96	
Total	246	

Q12_e. Please indicate the helpfulness of each campus resource you have used: On-Campus Library

	Frequency	Percent
Very Helpful	77	51.3
Helpful	38	25.3
Neither Helpful nor Unhelpful	9	6.0
Somewhat Unhelpful	2	1.3
Very Unhelpful	1	.7
Never Used	23	15.3
Total	**150**	**100.0**
No Response	96	
Total	246	

Q11_f. For each of the following campus resources you have used, please indicate if you were required to use or voluntarily used the campus resource: Math Study

	Frequency	Percent
Required	5	3.3
Voluntary	57	38.0
Never Used	88	58.7
Total	**150**	**100.0**
No Response	96	
Total	246	

Q12_f. Please indicate the helpfulness of each campus resource you have used: Math Study

	Frequency	Percent
Very Helpful	34	22.7
Helpful	25	16.7
Neither Helpful nor Unhelpful	8	5.3
Somewhat Unhelpful	1	.7
Very Unhelpful	2	1.3
Never Used	80	53.3
Total	**150**	**100.0**
No Response	96	
Total	246	

Q11_g. For each of the following campus resources you have used, please indicate if you were required to use or voluntarily used the campus resource: Tutoring Center

	Frequency	Percent
Required	8	5.3
Voluntary	82	54.7
Never Used	60	40.0
Total	**150**	**100.0**
No Response	96	
Total	246	

Q12_g. Please indicate the helpfulness of each campus resource you have used: Tutoring Center

	Frequency	Percent
Very Helpful	58	38.7
Helpful	22	14.7
Neither Helpful nor Unhelpful	7	4.7
Somewhat Unhelpful	2	1.3
Very Unhelpful	4	2.7
Never Used	57	38.0
Total	**150**	**100.0**
No Response	96	
Total	246	

Q11_h. For each of the following campus resources you have used, please indicate if you were required to use or voluntarily used the campus resource: DSPS

	Frequency	Percent
Required	6	4.0
Voluntary	21	14.0
Never Used	123	82.0
Total	**150**	**100.0**
No Response	96	
Total	246	

Q12_h. Please indicate the helpfulness of each campus resource you have used: DSPS

	Frequency	Percent
Very Helpful	21	14.0
Helpful	7	4.7
Neither Helpful nor Unhelpful	8	5.3
Somewhat Unhelpful	2	1.3
Never Used	112	74.7
Total	**150**	**100.0**
No Response	96	
Total	246	

Q11_i. For each of the following campus resources you have used, please indicate if you were required to use or voluntarily used the campus resource: EOPS

	Frequency	Percent
Required	7	4.7
Voluntary	21	14.0
Never Used	122	81.3
Total	**150**	**100.0**
No Response	96	
Total	246	

Q12_i. Please indicate the helpfulness of each campus resource you have used: EOPS

	Frequency	Percent
Very Helpful	23	15.3
Helpful	3	2.0
Neither Helpful nor Unhelpful	12	8.0
Somewhat Unhelpful	2	1.3
Very Unhelpful	1	.7
Never Used	109	72.7
Total	**150**	**100.0**
No Response	96	
Total	246	

Q11_j. For each of the following campus resources you have used, please indicate if you were required to use or voluntarily used the campus resource: Department Computer Labs

	Frequency	Percent
Required	14	9.3
Voluntary	58	38.7
Never Used	78	52.0
Total	**150**	**100.0**
No Response	96	
Total	246	

Q12_j. Please indicate the helpfulness of each campus resource you have used: Department Computer Labs

	Frequency	Percent
Very Helpful	34	22.7
Helpful	25	16.7
Neither Helpful nor Unhelpful	17	11.3
Never Used	74	49.3
Total	**150**	**100.0**
No Response	96	
Total	246	

Q11_k. For each of the following campus resources you have used, please indicate if you were required to use or voluntarily used the campus resource: Blackboard Help Line

	Frequency	Percent
Required	19	12.7
Voluntary	32	21.3
Never Used	99	66.0
Total	**150**	**100.0**
No Response	96	
Total	246	

Q12_k. Please indicate the helpfulness of each campus resource you have used: Blackboard Help Line

	Frequency	Percent
Very Helpful	26	17.3
Helpful	22	14.7
Neither Helpful nor Unhelpful	12	8.0
Very Unhelpful	2	1.3
Never Used	88	58.7
Total	**150**	**100.0**
No Response	96	
Total	246	

Q13. What I am learning/have learned in this class could be useful outside of the classroom for purposes other than achieving my academic goals.

	Frequency	Percent
Yes	211	85.8
No	35	14.2
Total	**246**	**100.0**

Q14. How satisfied are you with the availability of courses in this department?

	Frequency	Percent
Very Satisfied	36	14.6
Satisfied	49	19.9
Neutral	62	25.2
Dissatisfied	50	20.3
Very Dissatisfied	49	19.9
Total	**246**	**100.0**

Q15. Is your major in this department?

	Frequency	Percent
Yes	124	50.4
No	122	49.6
Total	**246**	**100.0**

Q16. What would be your preferred start time(s) for course offered on: WEEKDAYS

	Frequency	Percent
(Weekdays - 9am-noon)	143	58.1
(Weekdays - 12-3pm)	86	35.0
(Weekdays 4-10pm)	75	30.5
(Weekdays - 7am-8am)	54	22.0
(Weekdays - No Preference)	25	10.2

*Note: Since respondents are able to select more than one option, the total percent may not equal 100. Percentage is based on the total number of students responding to this item (i.e., 246).

Q17. What would be your preferred start time(s) for course offered on: SATURDAYS

	Frequency	Percent
(Saturdays - 9am-noon)	105	42.7
(Saturdays - No Preference)	104	42.3
(Saturdays - 12-3pm)	49	19.9
(Saturdays - 7am-8am)	39	15.9
(Saturdays 4-10pm)	31	12.6

*Note: Since respondents are able to select more than one option, the total percent may not equal 100. Percentage is based on the total number of students responding to this item (i.e., 246).

Q18. What would be your preferred start time(s) for course offered on: SUNDAYS

	Frequency	Percent
(Sundays - No Preference)	124	50.4
(Sundays - 9am-noon)	84	34.1
(Sundays - 12-3pm)	42	17.1
(Sundays - 7am-8am)	32	13.0
(Sundays 4-10pm)	23	9.3

*Note: Since respondents are able to select more than one option, the total percent may not equal 100. Percentage is based on the total number of students responding to this item (i.e., 246).

Q19. What would be your preferred start time(s) for courses offered on: (Distance Education)

	Frequency	Percent
Online	131	53.3
No Response	115	46.7
Total	**246**	**100.0**

Q20. Gender

	Frequency	Percent
Male	55	22.4
Female	191	77.6
Total	**246**	**100.0**

Q21. Age

	Frequency	Percent
Under 20	30	12.2
20-24	82	33.3
25-29	49	19.9
30-49	73	29.7
50 or older	12	4.9
Total	**246**	**100.0**

Q22. Ethnicity

Q22. Ethnicity	Frequency	Percent
White, Non-Hispanic and not of Middle Eastern descent	116	47.2
Hispanic	64	26.0
Asian	19	7.7
Black	14	5.7
Middle Eastern	12	4.9
Filipino	10	4.1
Two or more	9	3.7
Pacific Islander	2	.8
Total	**246**	**100.0**

Q23. Primary Language:

	Frequency	Percent
Arabic	7	2.8
Aramaic	2	.8
Chaldean	4	1.6
Chinese	3	1.2
English	200	81.3
Farsi	2	.8
French	1	.4
Japanese	1	.4
Korean	1	.4
Russian	3	1.2
Spanish	14	5.7
Tagalog	4	1.6
Vietnamese	4	1.6
Total	**246**	**100.0**

Q23. Primary Language: Other

	Frequency
Portuguese	2
Spanish	2
Thai	2
Arabic and Chaldean	1
Arabic and Spanish	1
Bulgarian	1
Romanian	1
Somalian	1
Swedish	1
Turkish	1
Vietnamese	1
Total	**14**

APPENDIX 8

Degrees and Certificates:

Semester/Year:	S06	F06	S07	F07	S08	F08	S09	F09	S10	F10	S11	TOTAL
Number of Students:	0	0	1	1	1	1	2	0	0	0	0	6

APPENDIX 9

Organizations Represented on Advisory Committee

The Biology Department currently has no Advisory Committee

APPENDIX 10

Sabbaticals, Conference, Workshop and Staff Development Activities

Name	Activity	Relevance
Shina Alagia	Development of Biology Learning Center – S2007	Academic
	Faculty Professional Development committee – 2007-2009	Professional
	Member of outstanding faculty selection committee – 2007	Professional
	Attended conference – Wiley's "Visualizing Future for Anatomy, Physiology & Microbiology" – F2007	Professional
	Participated in development of New Faculty Professional Development Web Browser set-up – S2010	Professional
	Attended WASC conference on SLO assessment. 2010-2011	Professional
	Member of SLO Rapid Response Team – 2010-2011	Professional
	Member- Sabbatical committee – S2011	Professional
	AFT Liaison – S2011	Professional

Sue Caldwell	Attended Lecture – "Neuroscience" – John Beggs	Professional
	Tenure Committee– 2006-2009	Staff
	Peer reviews – adjunct and full-time faculty members – 2009-2011	Staff
	Completed Bio 142 manual 2nd edition – S2009	Academic
	Completed all audiopodcasts for Bio 118 and Bio 141 – F2009	Academic
	Faculty Advisor – Campus Christian Fellowship – F2009-S2010	Activity
	Faculty Co-advisor – Fellowship of Christian Athletes – S2010	Activity
	Teach-in/teach-out – S2010	Academic
	Faculty Advisor –Challenge Club– 2010-2011	Activity
	Awarded rank of Assistant Professor – S2010	Professional
	Developed hybrid-online classes for Bio 118 and Bio 141 – S 2010	Academic
	Completed Bio 142 Lab Manual – Summer 2010	Academic
	Completed Learning Blackboard 9 online class – Summer 2010	Academic

Virginia Dudley	Chair of Full-Time Faculty Hire Committee: Allison Shearer – 2006	Staff
	Design and development: Native Garden: 2006-2007	Professional
	Task Force leader for first floor of new Science building. S2007	Professional
	Tenure Review committee chair for 2 faculty members. S2007	Staff
	Outreach Science Day volunteer: science workshop – S2007	Workshop
	Special Project: non-classified hourly employees - 2007	Staff
	Supervised use of Biology lab in cooperation with Media Department for student video project.	Academic
	Extensive revision of Bio 110 Lab Manual, including reformatting for us in all Bio 110 lab sections (Sabbatical project) S2009	Sabbatical
	Awarded rank of Professor – S2010	Professional
	Department Co-Chair – 2005 - present	Staff

Michael Golden	Academic Senate – F2006	Professional
	Planning: Budget Co-Chair – F2006	Professional
	Development of Greenhouse – 2006	Academic
	Tenure Review Committee (2 faculty members) – 2006-2007 (Chair)	Staff
	Bridges to the future program (in collaboration with SDSU & NIH) – 2006-2010	Workshop
	Steering Committee Member: United Faculty – 2006	Professional
	Hire committee – S2007	Staff
	Tenure review – S2007	Staff
	Senator at Large – United Faculty – 2007-2008	Professional
	Received grant for greenhouse plants – F2007	Academic
	Union organization – ATF – S2009	Professional
	Recruited 6 Bridges to the Future Students – S2009	Workshop
	Met with grant P.I. – S2009	Professional
	Student success committee – 2009	Academic
	Union Representative – ATF – 2009-2010	Professional

	Planning and Budget Committee – ATF – 2010-2011	Professional
	ATF Vice-President – 2010-2011	Professional
	Bridges to the future Coordinator – ten student names submitted – S2010	Workshop
	Landscape committee – to convert grasslands to natural (local) habitats – S2010-present	Activity
	Received SDSU's Homer Peabody award for excellence in teaching and mentoring – Summer 2010	Professional
	Participated in CSS Reserve Trail repair- S2011	Activity
	WASC Student Success Conference – S2011	Activity
	Bridges to the future – S2011	Workshop
Craig Milgrim	CAVA – California Virtual Academy: provided lab space and connection to College for "Virtual Academy " Students (H.S. Students from Home School program)	Activity
	Tenure Review Committee – S2007	Staff
	Hire committee: Faculty (1), Tech (2) S2007	Staff
	So. Cal Biotech Consortium – 2007	Professional

	Attended Epigenetics Worship, sponsored by SCBC – S2008	Workshop
	Bridges to the Future program – 2009-2010	Academic
	Partnership with Southern California Biotech Center – Biotech Bootcamp – Summer 2009	Academic
	Partnership with USD on Grant for TEM/SEM – Summer 2009	Professional
	SDICCA Mentor – Summer 2009-Summer 2010	Professional
	Succeed Grant at UCSD: partner – F2010	Professional
	USD grant: Federal Stimulus: partner – F2010	Professional
	Department Co-Chairman – 2005-present	Staff
Michele Perchez	New Hire 2006	Professional
	Microbiology tech hiring committee –2006-2007	Staff
	Academic Senate representative – 2006-2010	Professional
	Senate election committee – S2007	Professional
	Pre-professional Heath Club co-advisor – 2007-2008	Activity
	Community outreach – preschool 2007	Activity

	Scholarship Committee: evaluator F2007	Activity
	BEWISE Girls program volunteer – S2009	Academic
	GC Science Festival advisor – S2009	Activity
	1st annual GC Summer Institute ESL Learners and Learning Styles workshops: presenter – Summer 2009	Workshop
	Scholarship committee – S2010	Academic
	Bridges to the Future Mentor – organized 1st campus resources workshop –S2010	Academic
	Participated in teach-in- support of CA education – S2010	Workshop
	Organized Bridges to the Future Campus Resources information meeting (presentations by EOPS, TRANSFER, Financial Aid) – S2010	Activity
	Attended American Society for Microbiology: Conference for Undergraduate Educators – S2010	Activity
	Student Grievance Committee – S2010	Professional
	Scholarship Committee – S2010	Academic
	Community outreach – Cajon Park School: Germs activity – Summer 2010	Academic

	Human cheek cell DNA extraction activity: Project Safe program volunteer – Summer 2010 Peer-reviewed urease protocol – ASM CUE Conference – S2010	Activity Professional
Bonnie Ripley	New Hire 2007 Attempt to start Motorcyling Club – 2007 Published scientific paper in Population Ecology [Ripley & Caswell] – S2008 Began development of new Bio 240 curriculum Presenter: Teaching Biology to Non-majors. Attended poster and oral presentation on teaching biology to non-majors. Participated in focus group on non-majors textbooks. Sponsored by Pearson – S2008 Reviewed book chapter for Freeman (GE Biology textbook) – S2009 Worked with Virginia Dudley on NSF proposal – S2009 GC Science Festival: speaker – S2009 Reviewed 2 manuscripts for Hydrobiologia Journal- S2009	Professional Activity Professional Academic Workshop Professional Professional Workshop Professional

	Initiated partnership with USD for TEM/SEM proposal – Summer 2009	Professional
	Worked on Basic Skills Initiative project – analysis: reading grade data. Summer 2009	Academic
	Wrote and distributed report on results of Biology Dept./English Dept. study of Reading Grade Data and Success in Bio 120 – S2010	Academic
	Co-authored manuscript accepted for publication in Journal of Marine Mammal Research – S2010	Professional
	Co-authored "A simulation-based approach to evaluating population structure in non-equilibrial populations" in Journal of Cetacean Research and Management 11(2): 101-113 (2010)	Professional
Allison Shearer	New Hire 2006	Professional
	Sally Ride Festival – F2006	Activity
	Biology students services Association – UCSD – S2007	Activity
	Career Panel on Teaching Careers – S2007	Workshop
	Pre-professional Health Care Club Advisor – 2007-2008	Academic

	BEWISE Girls Advisory Committee, activities, workshop coordinator – 2007-2009	Activity
	Ran Bio 199: Human Dissection Class –F2007	Academic
	Supported Cary Willard with Science Decathlon at GC– S2008	Activity
	Academic Senate Representative – 2009	Activity
	San Diego Natural History Museum: lectures to 5^{th}-12^{th} grades: Science and Body Worlds- S2009	Professional
	Biotech Summer Bootcamp – Summer 2009, Summer 2010	Activity
	Special Curator talk (outreach) SDNHM on Body Worlds exhibit – 2009 (and ongoing)	Activity
	Human dissection and "cadaver tours" – Mondays – F2009	Academic
	Participated in teach-in – S2010	Academic
Richard Vessel	Presenter and Examiner in Middle School Science Decathlon at GC – S2008	Activity
	College for Kids – F2008	Activity
Allison Shearer and Sue Caldwell	Science Olympiad – F2006	Activity
Allison Shearer and Craig Milgrim	Co-writers ASGC grant for cadaver- F2009	Professional

	Obtained ASGC funding for new cadaver- S2010 Obtained new cadaver with ASGC grant – Summer 2010	Professional Professional
Michael Golden and Craig Milgrim	Bridges to the Future Program with SDSU – grant renewed S2008	Activity
Virginia Dudley and Craig Milgrim	Created community outreach using present and past faculty to educate K-12 classes in Biology from GC	Activity
Michele Perchez and Craig Milgrim	ARRA – Bridges to the Future Grant – 2010 & 2011	Academic
Rafael Gutierrez	Taught Anatomy session for UCSD teach TECH program – S2008	Professional
Hector Valtierra	Published scientific paper in Applied Biosafety – S2008 Collaboration with San Diego Coastkeeper on microbial water quality Presentation: H1N1 & Public Health, Toronto, Canada – F2009	Professional Professional Professional
Deanna Meier	Collaboration with researchers at NOAA to publish research papers – Summer 2009	Professional
Margo Monroe	Institutional Review Committee – Summer 2009	Activity
John Howard	Published article in SD Union Tribune about Vernal Pool Ecology and Conservation – S2010	Professional
Marit Evans-Layng	Participated in Least Tern Recovery Project – endangered shorebirds on SD coastlines (including Western snowy plover and horned larks) Summer 2010	Activity
Gail Lillis	Peer reviewed "Coagulase Protocol" for publication in Journal of	Professional

	Microbiology/Biology Education – Summer 2010 Received grant from Cyberlearning in Community Colleges of $300 towards ASM annual meeting and development of curriculum – Summer 2010	Conference

APPENDIX 11

Grossmont WSCH Analysis Report

Fall 2005

Course	TOPS	Total FTEF	Max WSCH	Max WSCH/ FTEF	Earned WSCH	Earned WSCH/ FTEF	% of Max
BIO 110	040100	2.150	1728.00	803.72	1440.00	669.76	83.33
BIO 112	040100	.400	261.00	652.50	132.00	330.00	50.57
BIO 114	040100	.200	108.00	540.00	102.00	510.00	94.44
BIO 116	040100	1.000	768.00	768.00	474.00	474.00	61.71
BIO 118	040100	.200	135.00	675.00	123.00	615.00	91.11
BIO 120	040100	4.500	3456.00	768.00	4008.00	890.66	115.97
BIO 125	040100	.067	35.00	522.38	19.00	283.58	54.28
BIO 140	040100	.800	576.00	720.00	756.00	945.00	131.25
BIO 141	040100	.400	330.00	825.00	354.00	885.00	107.27
BIO 142	040100	.300	192.00	640.00	264.00	880.00	137.50
BIO 144	040100	1.700	1140.00	670.58	1200.00	705.88	105.26
BIO 145	040100	.500	384.00	768.00	354.00	708.00	92.18
BIO 152	040100	1.600	936.00	585.00	1017.00	635.62	108.65
BIO 199	040100		10.00	10.00	10.00	10.00	100.00
BIO 210	040100	.400	330.00	825.00	345.00	862.50	104.54
BIO 211	040100	.334	192.00	574.85	198.00	592.81	103.12
BIO 212	040100	.167	96.00	574.85	93.00	556.88	96.87
BIO 215	040100	.283	125.00	441.69	65.00	229.68	52.00
BIO 220	040100	.200	96.00	480.00	87.00	435.00	90.62
BIO 221	040100	.167	90.00	538.92	72.00	431.13	80.00
******* BIO		15.368	10988.00	714.99	11113.00	723.12	101.13

Spring 2006

Course	TOPS	Total FTEF	Max WSCH	Max WSCH/ FTEF	Earned WSCH	Earned WSCH/ FTEF	% of Max
BIO 110	040100	2.500	1920.00	768.00	1740.00	696.00	90.62
BIO 112	040100	.400	255.00	637.50	126.00	315.00	49.41
BIO 114	040100	.200	135.00	675.00	141.00	705.00	104.44
BIO 116	040100	.850	576.00	677.64	324.00	381.17	56.25
BIO 118	040100	.200	150.00	750.00	135.00	675.00	90.00
BIO 120	040100	4.350	3372.00	775.17	3540.00	813.79	104.98
BIO 125	040100	.067	35.00	522.38	21.00	313.43	60.00

BIO 140	040100	1.300	864.00	664.61	990.00	761.53	114.58
BIO 141	040100	.400	330.00	825.00	366.00	915.00	110.90
BIO 142	040100	.300	192.00	640.00	246.00	820.00	128.12
BIO 144	040100	.850	576.00	677.64	732.00	861.17	127.08
BIO 145	040100	1.000	768.00	768.00	756.00	756.00	98.43
BIO 152	040100	1.600	936.00	585.00	1017.00	635.62	108.65
BIO 199	040100	12.00	12.00	12.00	12.00	100.00	
BIO 210	040100	.400	300.00	750.00	303.00	757.50	101.00
BIO 211	040100	.334	192.00	574.85	177.00	529.94	92.18
BIO 212	040100	.167	96.00	574.85	90.00	538.92	93.75
BIO 215	040100	.283	150.00	530.03	65.00	229.68	43.33
BIO 220	040100	.200	96.00	480.00	96.00	480.00	100.00
BIO 221	040100	.167	96.00	574.85	93.00	556.88	96.87
******* BIO		15.568	11051.00	709.85	10970.00	704.65	99.26

Fall 2006

Course	TOPS	Total FTEF	Max WSCH	Max WSCH/ FTEF	Earned WSCH	Earned WSCH/ FTEF	% of Max
BIO 110	040100	2.500	1920.00	768.00	1434.00	573.60	74.68
BIO 112	040100	.400	261.00	652.50	87.00	217.50	33.33
BIO 114	040100	.200	108.00	540.00	105.00	525.00	97.22
BIO 118	040100	.200	105.00	525.00	114.00	570.00	108.57
BIO 120	040100	4.850	3648.00	752.16	3948.00	814.02	108.22
BIO 125	040100	.066	35.00	530.30	12.00	181.81	34.28
BIO 140	040100	.800	576.00	720.00	612.00	765.00	106.25
BIO 141	040100	.400	330.00	825.00	363.00	907.50	110.00
BIO 142	040100	.300	192.00	640.00	276.00	920.00	143.75
BIO 144	040100	1.700	1140.00	670.58	1236.00	727.05	108.42
BIO 145	040100	.500	384.00	768.00	390.00	780.00	101.56
BIO 152	040100	1.450	936.00	645.51	1026.00	707.58	109.61
BIO 210	040100	.400	330.00	825.00	324.00	810.00	98.18
BIO 211	040100	.334	192.00	574.85	207.00	619.76	107.81
BIO 212	040100	.167	96.00	574.85	57.00	341.31	59.37
BIO 215	040100	.283	125.00	441.69	60.00	212.01	48.00
BIO 220	040100	.200	96.00	480.00	63.00	315.00	65.62
BIO 221	040100	.167	90.00	538.92	57.00	341.31	63.33
******* BIO		15.917	11332.00	711.94	10797.00	678.33	95.27

Spring 2007

Course	TOPS	Total FTEF	Max WSCH	Max WSCH/ FTEF	Earned WSCH	Earned WSCH/ FTEF	% of Max
BIO 110	040100	2.500	1920.00	768.00	1506.00	602.40	78.43
BIO 112	040100	.400	255.00	637.50	84.00	210.00	32.94
BIO 114	040100	.200	135.00	675.00	105.00	525.00	77.77
BIO 118	040100	.200	108.00	540.00	102.00	510.00	94.44
BIO 120	040100	4.350	3264.00	750.34	3630.00	834.48	111.21
BIO 125	040100	.067	35.00	522.38	14.00	208.95	40.00
BIO 140	040100	1.300	864.00	664.61	873.00	671.53	101.04
BIO 141	040100	.600	426.00	710.00	477.00	795.00	111.97
BIO 142	040100	.600	384.00	640.00	438.00	730.00	114.06
BIO 144	040100	.850	576.00	677.64	690.00	811.76	119.79
BIO 145	040100	1.000	768.00	768.00	822.00	822.00	107.03
BIO 152	040100	2.100	1170.00	557.14	1278.00	608.57	109.23
BIO 210	040100	.400	300.00	750.00	294.00	735.00	98.00
BIO 211	040100	.334	192.00	574.85	165.00	494.01	85.93
BIO 212	040100	.167	96.00	574.85	69.00	413.17	71.87
BIO 215	040100	.283	150.00	530.03	100.00	353.35	66.66
BIO 220	040100	.200	96.00	480.00	84.00	420.00	87.50
BIO 221	040100	.167	96.00	574.85	84.00	502.99	87.50
******* BIO		17.068	11795.00	691.05	11463.00	671.60	97.18

Fall 2007

Course	TOPS	Total FTEF	Max WSCH	Max WSCH/ FTEF	Earned WSCH	Earned WSCH/ FTEF	% of Max
BIO 105	040100	1.000	768.00	768.00	750.00	750.00	97.65
BIO 110	040100	2.500	1920.00	768.00	1578.00	631.20	82.18
BIO 112	040100	.400	261.00	652.50	99.00	247.50	37.93
BIO 114	040100	.200	150.00	750.00	63.00	315.00	42.00
BIO 118	040100	.200	105.00	525.00	111.00	555.00	105.71
BIO 120	040100	5.350	4032.00	753.64	4722.00	882.61	117.11
BIO 140	040100	1.300	864.00	664.61	918.00	706.15	106.25
BIO 141	040100	.600	465.00	775.00	399.00	665.00	85.80
BIO 142	040100	.600	384.00	640.00	360.00	600.00	93.75
BIO 144	040100	1.350	960.00	711.11	870.00	644.44	90.62
BIO 145	040100	.850	576.00	677.64	522.00	614.11	90.62
BIO 152	040100	2.100	1170.00	557.14	1233.00	587.14	105.38

BIO 199	040100		24.00	24.00	24.00	24.00	100.00
BIO 210	040100	.400	300.00	750.00	345.00	862.50	115.00
BIO 211	040100	.334	192.00	574.85	201.00	601.79	104.68
BIO 212	040100	.167	96.00	574.85	81.00	485.02	84.37
BIO 215	040100	.283	125.00	441.69	100.00	353.35	80.00
BIO 220	040100	.200	96.00	480.00	78.00	390.00	81.25
BIO 221	040100	.167	90.00	538.92	60.00	359.28	66.66
******* BIO		18.001	12578.00	698.73	12514.00	695.18	99.49

Spring 2008

Course	TOPS	Total FTEF	Max WSCH	Max WSCH/ FTEF	Earned WSCH	Earned WSCH/ FTEF	% of Max
BIO 105	040100	1.350	960.00	711.11	840.00	622.22	87.50
BIO 110	040100	2.500	1920.00	768.00	1560.00	624.00	81.25
BIO 112	040100	.400	255.00	637.50	132.00	330.00	51.76
BIO 114	040100	.200	96.00	480.00	90.00	450.00	93.75
BIO 118	040100	.200	78.00	390.00	78.00	390.00	100.00
BIO 120	040100	4.609	3840.00	833.06	4344.00	942.40	113.12
BIO 140	040100	1.300	864.00	664.61	990.00	761.53	114.58
BIO 141	040100	.600	426.00	710.00	423.00	705.00	99.29
BIO 142	040100	.600	384.00	640.00	390.00	650.00	101.56
BIO 144	040100	1.200	768.00	640.00	684.00	570.00	89.06
BIO 145	040100	1.000	768.00	768.00	678.00	678.00	88.28
BIO 152	040100	2.100	1170.00	557.14	1260.00	600.00	107.69
BIO 199	040100		21.00	21.00	21.00	21.00	100.00
BIO 210	040100	.400	300.00	750.00	330.00	825.00	110.00
BIO 211	040100	.334	192.00	574.85	207.00	619.76	107.81
BIO 212	040100	.167	96.00	574.85	69.00	413.17	71.87
BIO 215	040100	.283	150.00	530.03	60.00	212.01	40.00
BIO 220	040100	.200	96.00	480.00	81.00	405.00	84.37
BIO 221	040100	.167	96.00	574.85	78.00	467.06	81.25
******* BIO		17.610	12480.00	708.66	12315.00	699.29	98.67

Fall 2008

Course	Total FTEF	Max WSCH	Max WSCH/FTEF	Max Enroll	Earned WSCH	Earned WSCH/FTEF	Earned Enroll	% of Max	Approx FTES *
BIO-105-2243	0.150	192.00	1,280.00	32	186.00	1,240.00	31	96.88	6.20
BIO-105-2245	0.150	192.00	1,280.00	32	120.00	800.00	20	62.50	4.00
BIO-105-2242	0.350	192.00	548.57	32	198.00	565.71	33	103.13	6.60
BIO-105-2244	0.350	192.00	548.57	32	174.00	497.14	29	90.63	5.80
BIO 105	1.000	768.00	768.00	128	678.00	678.00	113	88.28	22.60
BIO-110-2232	0.150	192.00	1,280.00	32	150.00	1,000.00	25	78.13	5.00
BIO-110-2235	0.150	192.00	1,280.00	32	222.00	1,480.00	37	115.63	7.40
BIO-110-2237	0.150	192.00	1,280.00	32	144.00	960.00	24	75.00	4.80
BIO-110-2238	0.150	192.00	1,280.00	32	168.00	1,120.00	28	87.50	5.60
BIO-110-2229	0.350	192.00	548.57	32	156.00	445.71	26	81.25	5.20
BIO-110-2231	0.350	192.00	548.57	32	174.00	497.14	29	90.63	5.80
BIO-110-2234	0.350	192.00	548.57	32	174.00	497.14	29	90.63	5.80
BIO-110-2236	0.350	192.00	548.57	32	210.00	600.00	35	109.38	7.00
BIO-110-8749	0.350	192.00	548.57	32	60.00	171.43	10	31.25	2.00
BIO 110	2.350	1,728.00	735.32	288	1,458.00	620.43	243	84.38	48.60
BIO-112-2239	0.200	111.00	555.00	37	96.00	480.00	32	86.49	3.20
BIO-112-2240	0.200	150.00	750.00	50	42.00	210.00	14	28.00	1.40
BIO 112	0.400	261.00	652.50	87	138.00	345.00	46	52.87	4.60
BIO-114-2241	0.200	96.00	480.00	32	45.00	225.00	15	46.88	1.50
BIO 114	0.200	96.00	480.00	32	45.00	225.00	15	46.88	1.50
BIO-118-2246	0.200	150.00	750.00	50	93.00	465.00	31	62.00	3.10
BIO 118	0.200	150.00	750.00	50	93.00	465.00	31	62.00	3.10
BIO-120-8873	0.000	0.00	0	0	6.00	0	1	0	0.20

BIO-120-2248	0.150	192.00	1,280.00	32	192.00	1,280.00	32	100.00	6.40
BIO-120-2249	0.150	192.00	1,280.00	32	252.00	1,680.00	42	131.25	8.40
BIO-120-2252	0.150	192.00	1,280.00	32	228.00	1,520.00	38	118.75	7.60
BIO-120-2254	0.150	192.00	1,280.00	32	240.00	1,600.00	40	125.00	8.00
BIO-120-2256	0.150	192.00	1,280.00	32	204.00	1,360.00	34	106.25	6.80
BIO-120-2261	0.150	192.00	1,280.00	32	192.00	1,280.00	32	100.00	6.40
BIO-120-2265	0.150	192.00	1,280.00	32	264.00	1,760.00	44	137.50	8.80
BIO-120-2267	0.150	192.00	1,280.00	32	228.00	1,520.00	38	118.75	7.60
BIO-120-8751	0.150	192.00	1,280.00	32	228.00	1,520.00	38	118.75	7.60
BIO-120-2247	0.350	192.00	548.57	32	252.00	720.00	42	131.25	8.40
BIO-120-2250	0.350	192.00	548.57	32	198.00	565.71	33	103.13	6.60
BIO-120-2251	0.350	192.00	548.57	32	246.00	702.86	41	128.13	8.20
BIO-120-2253	0.350	192.00	548.57	32	234.00	668.57	39	121.88	7.80
BIO-120-2255	0.350	192.00	548.57	32	270.00	771.43	45	140.63	9.00
BIO-120-2257	0.350	192.00	548.57	32	264.00	754.29	44	137.50	8.80
BIO-120-2258	0.350	192.00	548.57	32	276.00	788.57	46	143.75	9.20
BIO-120-2259	0.350	192.00	548.57	32	210.00	600.00	35	109.38	7.00
BIO-120-2260	0.350	192.00	548.57	32	174.00	497.14	29	90.63	5.80
BIO-120-2263	0.350	192.00	548.57	32	210.00	600.00	35	109.38	7.00
BIO-120-2264	0.350	192.00	548.57	32	270.00	771.43	45	140.63	9.00
BIO-120-2266	0.350	192.00	548.57	32	168.00	480.00	28	87.50	5.60
BIO 120	5.550	4,032.00	726.49	672	4,806.00	865.95	801	119.20	160.20
BIO-140-2269	0.300	288.00	960.00	32	261.00	870.00	29	90.63	8.70
BIO-140-2268	0.500	288.00	576.00	32	297.00	594.00	33	103.13	9.90
BIO-140-2270	0.500	288.00	576.00	32	333.00	666.00	37	115.63	11.10
BIO 140	1.300	864.00	664.62	96	891.00	685.38	99	103.13	29.70
BIO-141-2271	0.200	180.00	900.00	60	171.00	855.00	57	95.00	5.70
BIO-141-2272	0.200	150.00	750.00	50	138.00	690.00	46	92.00	4.60

BIO-141-2273	0.200	135.00	675.00	45	120.00	600.00	40	88.89	4.00
BIO 141	0.600	465.00	775.00	155	429.00	715.00	143	92.26	14.30
BIO-142-2274	0.300	192.00	640.00	32	186.00	620.00	31	96.88	6.20
BIO-142-2275	0.300	192.00	640.00	32	204.00	680.00	34	106.25	6.80
BIO 142	0.600	384.00	640.00	64	390.00	650.00	65	101.56	13.00
BIO-144-2277	0.150	192.00	1,280.00	32	192.00	1,280.00	32	100.00	6.40
BIO-144-2280	0.150	192.00	1,280.00	32	162.00	1,080.00	27	84.38	5.40
BIO-144-2276	0.350	192.00	548.57	32	192.00	548.57	32	100.00	6.40
BIO-144-2278	0.350	192.00	548.57	32	156.00	445.71	26	81.25	5.20
BIO-144-2279	0.350	192.00	548.57	32	192.00	548.57	32	100.00	6.40
BIO 144	1.350	960.00	711.11	160	894.00	662.22	149	93.13	29.80
BIO-145-2282	0.150	192.00	1,280.00	32	114.00	760.00	19	59.38	3.80
BIO-145-2281	0.350	192.00	548.57	32	150.00	428.57	25	78.13	5.00
BIO-145-2283	0.350	192.00	548.57	32	222.00	634.29	37	115.63	7.40
BIO 145	0.850	576.00	677.65	96	486.00	571.76	81	84.38	16.20
BIO-152-2286	0.300	234.00	780.00	26	243.00	810.00	27	103.85	8.10
BIO-152-2288	0.300	234.00	780.00	26	243.00	810.00	27	103.85	8.10
BIO-152-2284	0.500	234.00	468.00	26	252.00	504.00	28	107.69	8.40
BIO-152-2285	0.500	234.00	468.00	26	252.00	504.00	28	107.69	8.40
BIO-152-2287	0.500	234.00	468.00	26	252.00	504.00	28	107.69	8.40
BIO 152	2.100	1,170.00	557.14	130	1,242.00	591.43	138	106.15	41.40
BIO-198-2289	0.000	0.00	0	150	0.00	0	36	0	0
BIO 198	0.000	0.00	0	150	0.00	0	36	0	0
BIO-210-2290	0.200	150.00	750.00	50	180.00	900.00	60	120.00	6.00
BIO-210-2291	0.200	150.00	750.00	50	171.00	855.00	57	114.00	5.70
BIO 210	0.400	300.00	750.00	100	351.00	877.50	117	117.00	11.70
BIO-211-2292	0.167	96.00	574.85	32	102.00	610.78	34	106.25	3.40
BIO-211-2293	0.167	96.00	574.85	32	102.00	610.78	34	106.25	3.40

BIO 211	0.334	192.00	574.85	64	204.00	610.78	68	106.25	6.80
BIO-212-2294	0.167	96.00	574.85	32	69.00	413.17	23	71.88	2.30
BIO 212	0.167	96.00	574.85	32	69.00	413.17	23	71.88	2.30
BIO-215-2295	0.283	150.00	530.04	30	60.00	212.01	12	40.00	2.00
BIO 215	0.283	150.00	530.04	30	60.00	212.01	12	40.00	2.00
BIO-220-2296	0.200	96.00	480.00	32	72.00	360.00	24	75.00	2.40
BIO 220	0.200	96.00	480.00	32	72.00	360.00	24	75.00	2.40
BIO-221-2297	0.167	90.00	538.92	30	66.00	395.21	22	73.33	2.20
BIO 221	0.167	90.00	538.92	30	66.00	395.21	22	73.33	2.20
BIO Total	**18.051**	**12,378.00**	**685.72**	**2396**	**12,372.00**	**685.39**	**2226**	**99.95**	**412.40**

Spring 2009

Course	Total FTEF	Max WSCH	Max WSCH/FTEF	Max Enroll	Earned WSCH	Earned WSCH/FTEF	Earned Enroll	% of Max	Approx FTES *
BIO-105-6367	0.150	192.00	1,280.00	32	150.00	1,000.00	25	78.13	5.00
BIO-105-6369	0.150	192.00	1,280.00	32	192.00	1,280.00	32	100.00	6.40
BIO-105-9130	0.150	192.00	1,280.00	32	180.00	1,200.00	30	93.75	6.00
BIO-105-6366	0.350	192.00	548.57	32	150.00	428.57	25	78.13	5.00
BIO-105-6368	0.350	192.00	548.57	32	186.00	531.43	31	96.88	6.20
BIO-105-6370	0.350	192.00	548.57	32	162.00	462.86	27	84.38	5.40
BIO 105	1.500	1,152.00	768.00	192	1,020.00	680.00	170	88.54	34.00
BIO-110-6354	0.150	192.00	1,280.00	32	114.00	760.00	19	59.38	3.80
BIO-110-6359	0.150	192.00	1,280.00	32	192.00	1,280.00	32	100.00	6.40
BIO-110-6361	0.150	192.00	1,280.00	32	180.00	1,200.00	30	93.75	6.00
BIO-110-6362	0.150	192.00	1,280.00	32	174.00	1,160.00	29	90.63	5.80
BIO-110-6353	0.350	192.00	548.57	32	126.00	360.00	21	65.63	4.20

BIO-110-6356	0.350	192.00	548.57	32	162.00	462.86	27	84.38	5.40
BIO-110-6357	0.350	192.00	548.57	32	90.00	257.14	15	46.88	3.00
BIO-110-6358	0.350	192.00	548.57	32	174.00	497.14	29	90.63	5.80
BIO-110-6360	0.350	192.00	548.57	32	234.00	668.57	39	121.88	7.80
BIO 110	2.350	1,728.00	735.32	288	1,446.00	615.32	241	83.68	48.20
BIO-112-6363	0.200	105.00	525.00	35	99.00	495.00	33	94.29	3.30
BIO-112-6364	0.200	75.00	375.00	25	57.00	285.00	19	76.00	1.90
BIO 112	0.400	180.00	450.00	60	156.00	390.00	52	86.67	5.20
BIO-114-6365	0.200	96.00	480.00	32	87.00	435.00	29	90.63	2.90
BIO 114	0.200	96.00	480.00	32	87.00	435.00	29	90.63	2.90
BIO-118-6371	0.200	78.00	390.00	26	87.00	435.00	29	111.54	2.90
BIO-118-9183	0.200	75.00	375.00	25	66.00	330.00	22	88.00	2.20
BIO 118	0.400	153.00	382.50	51	153.00	382.50	51	100.00	5.10
BIO-120-9323	0.000	0.00	0	0	6.00	0	1	0	0.20
BIO-120-6373	0.150	192.00	1,280.00	32	240.00	1,600.00	40	125.00	8.00
BIO-120-6374	0.150	192.00	1,280.00	32	210.00	1,400.00	35	109.38	7.00
BIO-120-6379	0.150	192.00	1,280.00	32	270.00	1,800.00	45	140.63	9.00
BIO-120-6381	0.150	192.00	1,280.00	32	222.00	1,480.00	37	115.63	7.40
BIO-120-6383	0.150	192.00	1,280.00	32	264.00	1,760.00	44	137.50	8.80
BIO-120-6385	0.150	192.00	1,280.00	32	216.00	1,440.00	36	112.50	7.20
BIO-120-6387	0.150	192.00	1,280.00	32	234.00	1,560.00	39	121.88	7.80
BIO-120-6389	0.150	192.00	1,280.00	32	240.00	1,600.00	40	125.00	8.00
BIO-120-6391	0.150	192.00	1,280.00	32	222.00	1,480.00	37	115.63	7.40
BIO-120-8910	0.150	192.00	1,280.00	32	276.00	1,840.00	46	143.75	9.20
BIO-120-6372	0.350	192.00	548.57	32	228.00	651.43	38	118.75	7.60
BIO-120-6375	0.350	192.00	548.57	32	204.00	582.86	34	106.25	6.80
BIO-120-6376	0.350	192.00	548.57	32	210.00	600.00	35	109.38	7.00
BIO-120-6377	0.350	192.00	548.57	32	150.00	428.57	25	78.13	5.00

BIO-120-6378	0.350	192.00	548.57	32	246.00	702.86	41	128.13	8.20
BIO-120-6380	0.350	192.00	548.57	32	258.00	737.14	43	134.38	8.60
BIO-120-6382	0.350	192.00	548.57	32	252.00	720.00	42	131.25	8.40
BIO-120-6384	0.350	192.00	548.57	32	198.00	565.71	33	103.13	6.60
BIO-120-6386	0.350	192.00	548.57	32	186.00	531.43	31	96.88	6.20
BIO-120-6388	0.350	192.00	548.57	32	264.00	754.29	44	137.50	8.80
BIO-120-6390	0.350	192.00	548.57	32	186.00	531.43	31	96.88	6.20
BIO 120	5.350	4,032.00	753.64	672	4,782.00	893.83	797	118.60	159.40
BIO-140-6393	0.300	288.00	960.00	32	279.00	930.00	31	96.88	9.30
BIO-140-6392	0.500	288.00	576.00	32	288.00	576.00	32	100.00	9.60
BIO-140-6394	0.500	288.00	576.00	32	351.00	702.00	39	121.88	11.70
BIO 140	1.300	864.00	664.62	96	918.00	706.15	102	106.25	30.60
BIO-141-6395	0.200	180.00	900.00	60	186.00	930.00	62	103.33	6.20
BIO-141-6396	0.200	156.00	780.00	52	150.00	750.00	50	96.15	5.00
BIO-141-6397	0.200	120.00	600.00	40	102.00	510.00	34	85.00	3.40
BIO 141	0.600	456.00	760.00	152	438.00	730.00	146	96.05	14.60
BIO-142-6398	0.300	192.00	640.00	32	204.00	680.00	34	106.25	6.80
BIO-142-6399	0.300	192.00	640.00	32	204.00	680.00	34	106.25	6.80
BIO 142	0.600	384.00	640.00	64	408.00	680.00	68	106.25	13.60
BIO-144-6401	0.150	192.00	1,280.00	32	216.00	1,440.00	36	112.50	7.20
BIO-144-6400	0.350	192.00	548.57	32	210.00	600.00	35	109.38	7.00
BIO-144-6402	0.350	192.00	548.57	32	168.00	480.00	28	87.50	5.60
BIO-144-6403	0.350	192.00	548.57	32	228.00	651.43	38	118.75	7.60
BIO 144	1.200	768.00	640.00	128	822.00	685.00	137	107.03	27.40
BIO-145-6405	0.150	192.00	1,280.00	32	132.00	880.00	22	68.75	4.40
BIO-145-6407	0.150	192.00	1,280.00	32	174.00	1,160.00	29	90.63	5.80
BIO-145-6404	0.350	192.00	548.57	32	186.00	531.43	31	96.88	6.20
BIO-145-6406	0.350	192.00	548.57	32	174.00	497.14	29	90.63	5.80

BIO 145	1.000	768.00	768.00	128	666.00	666.00	111	86.72	22.20
BIO-152-6411	0.300	234.00	780.00	26	252.00	840.00	28	107.69	8.40
BIO-152-6413	0.300	234.00	780.00	26	243.00	810.00	27	103.85	8.10
BIO-152-6409	0.500	234.00	468.00	26	261.00	522.00	29	111.54	8.70
BIO-152-6410	0.500	234.00	468.00	26	252.00	504.00	28	107.69	8.40
BIO-152-6412	0.500	234.00	468.00	26	252.00	504.00	28	107.69	8.40
BIO 152	2.100	1,170.00	557.14	130	1,260.00	600.00	140	107.69	42.00
BIO-198-6414	0.000	0.00	0	150	0.00	0	88	0	0
BIO 198	0.000	0.00	0	150	0.00	0	88	0	0
BIO-210-6415	0.200	150.00	750.00	50	165.00	825.00	55	110.00	5.50
BIO-210-6416	0.200	150.00	750.00	50	168.00	840.00	56	112.00	5.60
BIO 210	0.400	300.00	750.00	100	333.00	832.50	111	111.00	11.10
BIO-211-6417	0.167	96.00	574.85	32	99.00	592.81	33	103.13	3.30
BIO-211-6418	0.167	96.00	574.85	32	105.00	628.74	35	109.38	3.50
BIO 211	0.334	192.00	574.85	64	204.00	610.78	68	106.25	6.80
BIO-212-6419	0.167	96.00	574.85	32	93.00	556.89	31	96.88	3.10
BIO 212	0.167	96.00	574.85	32	93.00	556.89	31	96.88	3.10
BIO-215-9324	0.000	0.00	0	0	0.00	0	0	0	0
BIO-215-6420	0.283	150.00	530.04	30	25.00	88.34	5	16.67	0.83
BIO 215	0.283	150.00	530.04	30	25.00	88.34	5	16.67	0.83
BIO-220-6421	0.200	96.00	480.00	32	60.00	300.00	20	62.50	2.00
BIO 220	0.200	96.00	480.00	32	60.00	300.00	20	62.50	2.00
BIO-221-6422	0.167	96.00	574.85	32	48.00	287.43	16	50.00	1.60
BIO 221	0.167	96.00	574.85	32	48.00	287.43	16	50.00	1.60
BIO Total	**18.551**	**12,681.00**	**683.58**	**2433**	**12,919.00**	**696.40**	**2383**	**101.88**	**430.63**

Fall 2009

Course	Total FTEF	Max WSCH	Max WSCH/FTEF	Max Enroll	Earned WSCH	Earned WSCH/FTEF	Earned Enroll	% of Max	Approx FTES *
BIO-105-2243	0.150	192.00	1,280.00	32	186.00	1,240.00	31	96.88	6.20
BIO-105-2245	0.150	192.00	1,280.00	32	204.00	1,360.00	34	106.25	6.80
BIO-105-9541	0.150	192.00	1,280.00	32	192.00	1,280.00	32	100.00	6.40
BIO-105-2242	0.350	192.00	548.57	32	174.00	497.14	29	90.63	5.80
BIO-105-2244	0.350	192.00	548.57	32	192.00	548.57	32	100.00	6.40
BIO-105-9540	0.350	192.00	548.57	32	186.00	531.43	31	96.88	6.20
BIO 105	1.500	1,152.00	768.00	192	1,134.00	756.00	189	98.44	37.80
BIO-110-2232	0.150	192.00	1,280.00	32	156.00	1,040.00	26	81.25	5.20
BIO-110-2235	0.150	192.00	1,280.00	32	186.00	1,240.00	31	96.88	6.20
BIO-110-2237	0.150	96.00	640.00	32	93.00	620.00	31	96.88	3.10
BIO-110-2231	0.350	192.00	548.57	32	180.00	514.29	30	93.75	6.00
BIO-110-2234	0.350	192.00	548.57	32	192.00	548.57	32	100.00	6.40
BIO-110-2236	0.350	192.00	548.57	32	204.00	582.86	34	106.25	6.80
BIO 110	1.500	1,056.00	704.00	192	1,011.00	674.00	184	95.74	33.70
BIO-112-2239	0.200	111.00	555.00	37	117.00	585.00	39	105.41	3.90
BIO 112	0.200	111.00	555.00	37	117.00	585.00	39	105.41	3.90
BIO-114-2241	0.200	96.00	480.00	32	96.00	480.00	32	100.00	3.20
BIO 114	0.200	96.00	480.00	32	96.00	480.00	32	100.00	3.20
BIO-118-2246	0.200	150.00	750.00	50	138.00	690.00	46	92.00	4.60
BIO-118-9546	0.200	75.00	375.00	25	69.00	345.00	23	92.00	2.30
BIO 118	0.400	225.00	562.50	75	207.00	517.50	69	92.00	6.90
BIO-120-9835	0.000	0.00	0	0	6.00	0	1	0	0.20
BIO-120-2248	0.150	192.00	1,280.00	32	234.00	1,560.00	39	121.88	7.80
BIO-120-2249	0.150	192.00	1,280.00	32	264.00	1,760.00	44	137.50	8.80
BIO-120-2252	0.150	192.00	1,280.00	32	240.00	1,600.00	40	125.00	8.00

BIO-120-2254	0.150	192.00	1,280.00	32	228.00	1,520.00	38	118.75	7.60
BIO-120-2256	0.150	192.00	1,280.00	32	210.00	1,400.00	35	109.38	7.00
BIO-120-2257	0.150	192.00	1,280.00	32	240.00	1,600.00	40	125.00	8.00
BIO-120-2258	0.150	192.00	1,280.00	32	258.00	1,720.00	43	134.38	8.60
BIO-120-2261	0.150	192.00	1,280.00	32	246.00	1,640.00	41	128.13	8.20
BIO-120-2265	0.150	192.00	1,280.00	32	240.00	1,600.00	40	125.00	8.00
BIO-120-2267	0.150	192.00	1,280.00	32	240.00	1,600.00	40	125.00	8.00
BIO-120-2247	0.350	192.00	548.57	32	228.00	651.43	38	118.75	7.60
BIO-120-2251	0.350	192.00	548.57	32	252.00	720.00	42	131.25	8.40
BIO-120-2253	0.350	192.00	548.57	32	228.00	651.43	38	118.75	7.60
BIO-120-2255	0.350	192.00	548.57	32	252.00	720.00	42	131.25	8.40
BIO-120-2260	0.350	192.00	548.57	32	210.00	600.00	35	109.38	7.00
BIO-120-2263	0.350	192.00	548.57	32	216.00	617.14	36	112.50	7.20
BIO-120-2264	0.350	192.00	548.57	32	258.00	737.14	43	134.38	8.60
BIO-120-2266	0.350	192.00	548.57	32	210.00	600.00	35	109.38	7.00
BIO-120-8751	0.350	192.00	548.57	32	246.00	702.86	41	128.13	8.20
BIO 120	4.650	3,648.00	784.52	608	4,506.00	969.03	751	123.52	150.20
BIO-140-2269	0.300	288.00	960.00	32	279.00	930.00	31	96.88	9.30
BIO-140-2268	0.500	288.00	576.00	32	342.00	684.00	38	118.75	11.40
BIO-140-2270	0.500	288.00	576.00	32	351.00	702.00	39	121.88	11.70
BIO 140	1.300	864.00	664.62	96	972.00	747.69	108	112.50	32.40
BIO-141-2271	0.200	180.00	900.00	60	219.00	1,095.00	73	121.67	7.30
BIO-141-2272	0.200	150.00	750.00	50	165.00	825.00	55	110.00	5.50
BIO-141-2273	0.200	135.00	675.00	45	132.00	660.00	44	97.78	4.40
BIO-141-9547	0.200	75.00	375.00	25	93.00	465.00	31	124.00	3.10
BIO 141	0.800	540.00	675.00	180	609.00	761.25	203	112.78	20.30
BIO-142-2274	0.300	192.00	640.00	32	216.00	720.00	36	112.50	7.20
BIO-142-2275	0.300	192.00	640.00	32	192.00	640.00	32	100.00	6.40

BIO 142	0.600	384.00	640.00	64	408.00	680.00	68	106.25	13.60
BIO-144-2277	0.150	192.00	1,280.00	32	222.00	1,480.00	37	115.63	7.40
BIO-144-2280	0.150	192.00	1,280.00	32	228.00	1,520.00	38	118.75	7.60
BIO-144-2276	0.350	192.00	548.57	32	216.00	617.14	36	112.50	7.20
BIO-144-2278	0.350	192.00	548.57	32	192.00	548.57	32	100.00	6.40
BIO-144-2279	0.350	192.00	548.57	32	204.00	582.86	34	106.25	6.80
BIO 144	1.350	960.00	711.11	160	1,062.00	786.67	177	110.63	35.40
BIO-145-2282	0.350	192.00	548.57	32	132.00	377.14	22	68.75	4.40
BIO-145-2283	0.350	192.00	548.57	32	222.00	634.29	37	115.63	7.40
BIO 145	0.700	384.00	548.57	64	354.00	505.71	59	92.19	11.80
BIO-152-2286	0.300	252.00	840.00	28	270.00	900.00	30	107.14	9.00
BIO-152-2284	0.500	252.00	504.00	28	270.00	540.00	30	107.14	9.00
BIO-152-2285	0.500	252.00	504.00	28	270.00	540.00	30	107.14	9.00
BIO-152-2287	0.500	252.00	504.00	28	252.00	504.00	28	100.00	8.40
BIO 152	1.800	1,008.00	560.00	112	1,062.00	590.00	118	105.36	35.40
BIO-210-2290	0.200	150.00	750.00	50	165.00	825.00	55	110.00	5.50
BIO-210-2291	0.200	150.00	750.00	50	150.00	750.00	50	100.00	5.00
BIO 210	0.400	300.00	750.00	100	315.00	787.50	105	105.00	10.50
BIO-211-2292	0.167	96.00	574.85	32	102.00	610.78	34	106.25	3.40
BIO-211-2293	0.167	96.00	574.85	32	105.00	628.74	35	109.38	3.50
BIO 211	0.334	192.00	574.85	64	207.00	619.76	69	107.81	6.90
BIO-212-2294	0.167	96.00	574.85	32	93.00	556.89	31	96.88	3.10
BIO 212	0.167	96.00	574.85	32	93.00	556.89	31	96.88	3.10
BIO-220-2296	0.200	96.00	480.00	32	48.00	240.00	16	50.00	1.60
BIO 220	0.200	96.00	480.00	32	48.00	240.00	16	50.00	1.60
BIO-221-2297	0.167	90.00	538.92	30	45.00	269.46	15	50.00	1.50
BIO 221	0.167	90.00	538.92	30	45.00	269.46	15	50.00	1.50
BIO Total	**16.268**	**11,202.00**	**688.59**	**2070**	**12,246.00**	**752.77**	**2233**	**109.32**	**408.20**

Spring 2010

Course	Total FTEF	Max WSCH	Max WSCH/FTEF	Max Enroll	Earned WSCH	Earned WSCH/FTEF	Earned Enroll	% of Max	Approx FTES *
BIO-105-6367	0.150	192.00	1,280.00	32	186.00	1,240.00	31	96.88	6.20
BIO-105-6369	0.150	192.00	1,280.00	32	174.00	1,160.00	29	90.63	5.80
BIO-105-9130	0.150	192.00	1,280.00	32	192.00	1,280.00	32	100.00	6.40
BIO-105-6366	0.350	192.00	548.57	32	168.00	480.00	28	87.50	5.60
BIO-105-6368	0.350	192.00	548.57	32	180.00	514.29	30	93.75	6.00
BIO-105-6370	0.350	192.00	548.57	32	186.00	531.43	31	96.88	6.20
BIO 105	1.500	1,152.00	768.00	192	1,086.00	724.00	181	94.27	36.20
BIO-110-6357	0.150	192.00	1,280.00	32	198.00	1,320.00	33	103.13	6.60
BIO-110-6359	0.150	192.00	1,280.00	32	192.00	1,280.00	32	100.00	6.40
BIO-110-6361	0.150	192.00	1,280.00	32	192.00	1,280.00	32	100.00	6.40
BIO-110-6356	0.350	192.00	548.57	32	204.00	582.86	34	106.25	6.80
BIO-110-6358	0.350	192.00	548.57	32	192.00	548.57	32	100.00	6.40
BIO-110-6360	0.350	192.00	548.57	32	210.00	600.00	35	109.38	7.00
BIO 110	1.500	1,152.00	768.00	192	1,188.00	792.00	198	103.13	39.60
BIO-112-6363	0.200	105.00	525.00	35	111.00	555.00	37	105.71	3.70
BIO 112	0.200	105.00	525.00	35	111.00	555.00	37	105.71	3.70
BIO-114-6365	0.200	96.00	480.00	32	93.00	465.00	31	96.88	3.10
BIO 114	0.200	96.00	480.00	32	93.00	465.00	31	96.88	3.10
BIO-118-6371	0.200	78.00	390.00	26	87.00	435.00	29	111.54	2.90
BIO-118-9183	0.200	75.00	375.00	25	78.00	390.00	26	104.00	2.60
BIO 118	0.400	153.00	382.50	51	165.00	412.50	55	107.84	5.50
BIO-120-6373	0.150	192.00	1,280.00	32	240.00	1,600.00	40	125.00	8.00
BIO-120-6374	0.150	192.00	1,280.00	32	246.00	1,640.00	41	128.13	8.20
BIO-120-6379	0.150	192.00	1,280.00	32	258.00	1,720.00	43	134.38	8.60
BIO-120-6381	0.150	192.00	1,280.00	32	228.00	1,520.00	38	118.75	7.60

BIO-120-6383	0.150	192.00	1,280.00	32	252.00	1,680.00	42	131.25	8.40
BIO-120-6385	0.150	192.00	1,280.00	32	228.00	1,520.00	38	118.75	7.60
BIO-120-6387	0.150	192.00	1,280.00	32	234.00	1,560.00	39	121.88	7.80
BIO-120-6389	0.150	192.00	1,280.00	32	240.00	1,600.00	40	125.00	8.00
BIO-120-6391	0.150	192.00	1,280.00	32	180.00	1,200.00	30	93.75	6.00
BIO-120-6372	0.350	192.00	548.57	32	258.00	737.14	43	134.38	8.60
BIO-120-6378	0.350	192.00	548.57	32	216.00	617.14	36	112.50	7.20
BIO-120-6380	0.350	192.00	548.57	32	270.00	771.43	45	140.63	9.00
BIO-120-6382	0.350	192.00	548.57	32	228.00	651.43	38	118.75	7.60
BIO-120-6384	0.350	192.00	548.57	32	216.00	617.14	36	112.50	7.20
BIO-120-6386	0.350	192.00	548.57	32	210.00	600.00	35	109.38	7.00
BIO-120-6388	0.350	192.00	548.57	32	258.00	737.14	43	134.38	8.60
BIO-120-6390	0.350	192.00	548.57	32	162.00	462.86	27	84.38	5.40
BIO 120	4.150	3,264.00	786.51	544	3,924.00	945.54	654	120.22	130.80
BIO-140-6393	0.300	288.00	960.00	32	315.00	1,050.00	35	109.38	10.50
BIO-140-6392	0.500	288.00	576.00	32	333.00	666.00	37	115.63	11.10
BIO-140-6394	0.500	288.00	576.00	32	351.00	702.00	39	121.88	11.70
BIO 140	1.300	864.00	664.62	96	999.00	768.46	111	115.63	33.30
BIO-141-6395	0.200	150.00	750.00	50	201.00	1,005.00	67	134.00	6.70
BIO-141-6396	0.200	150.00	750.00	50	192.00	960.00	64	128.00	6.40
BIO-141-6397	0.200	135.00	675.00	45	105.00	525.00	35	77.78	3.50
BIO 141	0.600	435.00	725.00	145	498.00	830.00	166	114.48	16.60
BIO-142-6398	0.300	192.00	640.00	32	174.00	580.00	29	90.63	5.80
BIO-142-6399	0.300	192.00	640.00	32	222.00	740.00	37	115.63	7.40
BIO 142	0.600	384.00	640.00	64	396.00	660.00	66	103.13	13.20
BIO-144-6401	0.150	192.00	1,280.00	32	234.00	1,560.00	39	121.88	7.80
BIO-144-6400	0.350	192.00	548.57	32	228.00	651.43	38	118.75	7.60
BIO-144-6402	0.350	192.00	548.57	32	204.00	582.86	34	106.25	6.80

BIO-144-6403	0.350	192.00	548.57	32	222.00	634.29	37	115.63	7.40
BIO 144	1.200	768.00	640.00	128	888.00	740.00	148	115.63	29.60
BIO-145-6407	0.150	192.00	1,280.00	32	186.00	1,240.00	31	96.88	6.20
BIO-145-0005	0.350	192.00	548.57	32	108.00	308.57	18	56.25	3.60
BIO-145-6405	0.350	192.00	548.57	32	186.00	531.43	31	96.88	6.20
BIO-145-6406	0.350	192.00	548.57	32	180.00	514.29	30	93.75	6.00
BIO 145	1.200	768.00	640.00	128	660.00	550.00	110	85.94	22.00
BIO-152-6411	0.300	234.00	780.00	26	261.00	870.00	29	111.54	8.70
BIO-152-6409	0.500	243.00	486.00	27	261.00	522.00	29	107.41	8.70
BIO-152-6410	0.500	234.00	468.00	26	270.00	540.00	30	115.38	9.00
BIO-152-6412	0.500	234.00	468.00	26	252.00	504.00	28	107.69	8.40
BIO 152	1.800	945.00	525.00	105	1,044.00	580.00	116	110.48	34.80
BIO-210-6415	0.200	150.00	750.00	50	102.00	510.00	34	68.00	3.40
BIO-210-6416	0.200	150.00	750.00	50	132.00	660.00	44	88.00	4.40
BIO 210	0.400	300.00	750.00	100	234.00	585.00	78	78.00	7.80
BIO-211-6417	0.167	96.00	574.85	32	105.00	628.74	35	109.38	3.50
BIO-211-6418	0.167	96.00	574.85	32	105.00	628.74	35	109.38	3.50
BIO 211	0.334	192.00	574.85	64	210.00	628.74	70	109.38	7.00
BIO-212-6419	0.167	96.00	574.85	32	126.00	754.49	42	131.25	4.20
BIO 212	0.167	96.00	574.85	32	126.00	754.49	42	131.25	4.20
BIO-215-6420	0.283	60.00	212.01	12	65.00	229.68	13	108.33	2.17
BIO 215	0.283	60.00	212.01	12	65.00	229.68	13	108.33	2.17
BIO-220-6421	0.200	72.00	360.00	24	78.00	390.00	26	108.33	2.60
BIO 220	0.200	72.00	360.00	24	78.00	390.00	26	108.33	2.60
BIO-221-6422	0.167	72.00	431.14	24	75.00	449.10	25	104.17	2.50
BIO 221	0.167	72.00	431.14	24	75.00	449.10	25	104.17	2.50
BIO Total	**16.201**	**10,878.00**	**671.44**	**1968**	**11,840.00**	**730.82**	**2127**	**108.84**	**394.67**

Fall 2010

Course	Total FTEF	Max WSCH	Max WSCH/FTEF	Max Enroll	Earned WSCH	Earned WSCH/FTEF	Earned Enroll	% of Max	Approx FTES *
BIO-105-2243	0.150	192.00	1,280.00	32	204.00	1,360.00	34	106.25	6.80
BIO-105-2245	0.150	192.00	1,280.00	32	180.00	1,200.00	30	93.75	6.00
BIO-105-9541	0.150	192.00	1,280.00	32	192.00	1,280.00	32	100.00	6.40
BIO-105-2242	0.350	192.00	548.57	32	204.00	582.86	34	106.25	6.80
BIO-105-2244	0.350	192.00	548.57	32	192.00	548.57	32	100.00	6.40
BIO-105-9540	0.350	192.00	548.57	32	186.00	531.43	31	96.88	6.20
BIO 105	1.500	1,152.00	768.00	192	1,158.00	772.00	193	100.52	38.60
BIO-110-2232	0.150	192.00	1,280.00	32	216.00	1,440.00	36	112.50	7.20
BIO-110-2235	0.150	192.00	1,280.00	32	210.00	1,400.00	35	109.38	7.00
BIO-110-2237	0.150	96.00	640.00	32	93.00	620.00	31	96.88	3.10
BIO-110-2231	0.350	192.00	548.57	32	192.00	548.57	32	100.00	6.40
BIO-110-2234	0.350	192.00	548.57	32	186.00	531.43	31	96.88	6.20
BIO-110-2236	0.350	192.00	548.57	32	192.00	548.57	32	100.00	6.40
BIO 110	1.500	1,056.00	704.00	192	1,089.00	726.00	197	103.13	36.30
BIO-112-2239	0.200	150.00	750.00	50	153.00	765.00	51	102.00	5.10
BIO 112	0.200	150.00	750.00	50	153.00	765.00	51	102.00	5.10
BIO-114-2241	0.200	96.00	480.00	32	96.00	480.00	32	100.00	3.20
BIO 114	0.200	96.00	480.00	32	96.00	480.00	32	100.00	3.20
BIO-118-9546	0.200	75.00	375.00	25	69.00	345.00	23	92.00	2.30
BIO 118	0.200	75.00	375.00	25	69.00	345.00	23	92.00	2.30
BIO-120-2248	0.150	192.00	1,280.00	32	216.00	1,440.00	36	112.50	7.20
BIO-120-2249	0.150	192.00	1,280.00	32	216.00	1,440.00	36	112.50	7.20
BIO-120-2252	0.150	192.00	1,280.00	32	216.00	1,440.00	36	112.50	7.20
BIO-120-2254	0.150	192.00	1,280.00	32	228.00	1,520.00	38	118.75	7.60
BIO-120-2256	0.150	192.00	1,280.00	32	222.00	1,480.00	37	115.63	7.40

BIO-120-2261	0.150	192.00	1,280.00	32	246.00	1,640.00	41	128.13	8.20
BIO-120-2265	0.150	192.00	1,280.00	32	240.00	1,600.00	40	125.00	8.00
BIO-120-2267	0.150	192.00	1,280.00	32	222.00	1,480.00	37	115.63	7.40
BIO-120-2247	0.350	192.00	548.57	32	216.00	617.14	36	112.50	7.20
BIO-120-2251	0.350	192.00	548.57	32	210.00	600.00	35	109.38	7.00
BIO-120-2253	0.350	192.00	548.57	32	222.00	634.29	37	115.63	7.40
BIO-120-2255	0.350	192.00	548.57	32	234.00	668.57	39	121.88	7.80
BIO-120-2260	0.350	192.00	548.57	32	228.00	651.43	38	118.75	7.60
BIO-120-2264	0.350	192.00	548.57	32	234.00	668.57	39	121.88	7.80
BIO-120-2266	0.350	192.00	548.57	32	222.00	634.29	37	115.63	7.40
BIO 120	3.650	2,880.00	789.04	480	3,372.00	923.84	562	117.08	112.40
BIO-140-2269	0.300	288.00	960.00	32	324.00	1,080.00	36	112.50	10.80
BIO-140-2268	0.500	288.00	576.00	32	279.00	558.00	31	96.88	9.30
BIO-140-2270	0.500	288.00	576.00	32	324.00	648.00	36	112.50	10.80
BIO 140	1.300	864.00	664.62	96	927.00	713.08	103	107.29	30.90
BIO-141-2271	0.200	210.00	1,050.00	70	207.00	1,035.00	69	98.57	6.90
BIO-141-2272	0.200	240.00	1,200.00	80	213.00	1,065.00	71	88.75	7.10
BIO-141-2273	0.200	135.00	675.00	45	126.00	630.00	42	93.33	4.20
BIO-141-9547	0.200	75.00	375.00	25	87.00	435.00	29	116.00	2.90
BIO 141	0.800	660.00	825.00	220	633.00	791.25	211	95.91	21.10
BIO-142-2274	0.300	192.00	640.00	32	204.00	680.00	34	106.25	6.80
BIO-142-2275	0.300	192.00	640.00	32	150.00	500.00	25	78.13	5.00
BIO 142	0.600	384.00	640.00	64	354.00	590.00	59	92.19	11.80
BIO-144-2277	0.150	192.00	1,280.00	32	234.00	1,560.00	39	121.88	7.80
BIO-144-2276	0.350	192.00	548.57	32	210.00	600.00	35	109.38	7.00
BIO-144-2278	0.350	192.00	548.57	32	180.00	514.29	30	93.75	6.00
BIO-144-2280	0.350	192.00	548.57	32	252.00	720.00	42	131.25	8.40
BIO 144	1.200	768.00	640.00	128	876.00	730.00	146	114.06	29.20

BIO-145-5394	0.150	192.00	1,280.00	32	180.00	1,200.00	30	93.75	6.00
BIO-145-2282	0.350	192.00	548.57	32	114.00	325.71	19	59.38	3.80
BIO-145-2283	0.350	192.00	548.57	32	180.00	514.29	30	93.75	6.00
BIO 145	0.850	576.00	677.65	96	474.00	557.65	79	82.29	15.80
BIO-152-2286	0.300	252.00	840.00	28	261.00	870.00	29	103.57	8.70
BIO-152-2284	0.500	252.00	504.00	28	252.00	504.00	28	100.00	8.40
BIO-152-2285	0.500	252.00	504.00	28	252.00	504.00	28	100.00	8.40
BIO-152-2287	0.500	252.00	504.00	28	261.00	522.00	29	103.57	8.70
BIO 152	1.800	1,008.00	560.00	112	1,026.00	570.00	114	101.79	34.20
BIO-180-5395	0.200	150.00	750.00	50	81.00	405.00	27	54.00	2.70
BIO 180	0.200	150.00	750.00	50	81.00	405.00	27	54.00	2.70
BIO-230-5396	0.367	180.00	490.46	30	120.00	326.98	20	66.67	4.00
BIO 230	0.367	180.00	490.46	30	120.00	326.98	20	66.67	4.00
BIO-240-5397	0.417	224.00	537.17	32	266.00	637.89	38	118.75	8.87
BIO 240	0.417	224.00	537.17	32	266.00	637.89	38	118.75	8.87
BIO Total	**14.784**	**10,223.00**	**691.49**	**1799**	**10,694.00**	**723.35**	**1855**	**104.61**	**356.47**

Spring 2011

Course	Total FTEF	Max WSCH	Max WSCH/FTEF	Max Enroll	Earned WSCH	Earned WSCH/FTEF	Earned Enroll	% of Max	Approx FTES *
BIO-105-6367	0.150	192.00	1,280.00	32	192.00	1,280.00	32	100.00	6.40
BIO-105-6369	0.150	192.00	1,280.00	32	192.00	1,280.00	32	100.00	6.40
BIO-105-6370	0.150	192.00	1,280.00	32	156.00	1,040.00	26	81.25	5.20
BIO-105-6366	0.350	192.00	548.57	32	150.00	428.57	25	78.13	5.00
BIO-105-6368	0.350	192.00	548.57	32	168.00	480.00	28	87.50	5.60
BIO-105-9130	0.350	192.00	548.57	32	186.00	531.43	31	96.88	6.20
BIO 105	1.500	1,152.00	768.00	192	1,044.00	696.00	174	90.63	34.80
BIO-110-6357	0.150	192.00	1,280.00	32	174.00	1,160.00	29	90.63	5.80

BIO-110-6359	0.150	192.00	1,280.00	32	192.00	1,280.00	32	100.00	6.40
BIO-110-6361	0.150	192.00	1,280.00	32	174.00	1,160.00	29	90.63	5.80
BIO-110-6356	0.350	192.00	548.57	32	192.00	548.57	32	100.00	6.40
BIO-110-6358	0.350	192.00	548.57	32	186.00	531.43	31	96.88	6.20
BIO-110-6360	0.350	192.00	548.57	32	192.00	548.57	32	100.00	6.40
BIO 110	1.500	1,152.00	768.00	192	1,110.00	740.00	185	96.35	37.00
BIO-112-6363	0.200	150.00	750.00	50	174.00	870.00	58	116.00	5.80
BIO 112	0.200	150.00	750.00	50	174.00	870.00	58	116.00	5.80
BIO-114-6365	0.200	96.00	480.00	32	87.00	435.00	29	90.63	2.90
BIO 114	0.200	96.00	480.00	32	87.00	435.00	29	90.63	2.90
BIO-118-9183	0.200	108.00	540.00	36	81.00	405.00	27	75.00	2.70
BIO 118	0.200	108.00	540.00	36	81.00	405.00	27	75.00	2.70
BIO-120-6373	0.150	192.00	1,280.00	32	216.00	1,440.00	36	112.50	7.20
BIO-120-6374	0.150	192.00	1,280.00	32	216.00	1,440.00	36	112.50	7.20
BIO-120-6379	0.150	192.00	1,280.00	32	228.00	1,520.00	38	118.75	7.60
BIO-120-6383	0.150	192.00	1,280.00	32	216.00	1,440.00	36	112.50	7.20
BIO-120-6385	0.150	192.00	1,280.00	32	234.00	1,560.00	39	121.88	7.80
BIO-120-6387	0.150	192.00	1,280.00	32	198.00	1,320.00	33	103.13	6.60
BIO-120-6389	0.150	192.00	1,280.00	32	252.00	1,680.00	42	131.25	8.40
BIO-120-6391	0.150	192.00	1,280.00	32	216.00	1,440.00	36	112.50	7.20
BIO-120-6372	0.350	192.00	548.57	32	216.00	617.14	36	112.50	7.20
BIO-120-6378	0.350	192.00	548.57	32	228.00	651.43	38	118.75	7.60
BIO-120-6382	0.350	192.00	548.57	32	216.00	617.14	36	112.50	7.20
BIO-120-6384	0.350	192.00	548.57	32	228.00	651.43	38	118.75	7.60
BIO-120-6386	0.350	192.00	548.57	32	198.00	565.71	33	103.13	6.60
BIO-120-6388	0.350	192.00	548.57	32	276.00	788.57	46	143.75	9.20
BIO-120-6390	0.350	192.00	548.57	32	204.00	582.86	34	106.25	6.80
BIO 120	3.650	2,880.00	789.04	480	3,342.00	915.62	557	116.04	111.40

BIO-140-6393	0.300	288.00	960.00	32	279.00	930.00	31	96.88	9.30
BIO-140-6392	0.500	288.00	576.00	32	324.00	648.00	36	112.50	10.80
BIO-140-6394	0.500	288.00	576.00	32	297.00	594.00	33	103.13	9.90
BIO 140	1.300	864.00	664.62	96	900.00	692.31	100	104.17	30.00
BIO-141-6395	0.200	225.00	1,125.00	75	198.00	990.00	66	88.00	6.60
BIO-141-6396	0.200	240.00	1,200.00	80	192.00	960.00	64	80.00	6.40
BIO-141-6397	0.200	150.00	750.00	50	129.00	645.00	43	86.00	4.30
BIO 141	0.600	615.00	1,025.00	205	519.00	865.00	173	84.39	17.30
BIO-142-6398	0.300	192.00	640.00	32	102.00	340.00	17	53.13	3.40
BIO-142-6399	0.300	192.00	640.00	32	246.00	820.00	41	128.13	8.20
BIO 142	0.600	384.00	640.00	64	348.00	580.00	58	90.63	11.60
BIO-144-6401	0.150	192.00	1,280.00	32	222.00	1,480.00	37	115.63	7.40
BIO-144-6400	0.350	192.00	548.57	32	210.00	600.00	35	109.38	7.00
BIO-144-6402	0.350	192.00	548.57	32	150.00	428.57	25	78.13	5.00
BIO-144-6403	0.350	192.00	548.57	32	192.00	548.57	32	100.00	6.40
BIO 144	1.200	768.00	640.00	128	774.00	645.00	129	100.78	25.80
BIO-145-6406	0.150	192.00	1,280.00	32	114.00	760.00	19	59.38	3.80
BIO-145-6405	0.350	192.00	548.57	32	156.00	445.71	26	81.25	5.20
BIO-145-6407	0.350	192.00	548.57	32	216.00	617.14	36	112.50	7.20
BIO 145	0.850	576.00	677.65	96	486.00	571.76	81	84.38	16.20
BIO-152-6411	0.300	234.00	780.00	26	261.00	870.00	29	111.54	8.70
BIO-152-6409	0.500	252.00	504.00	28	270.00	540.00	30	107.14	9.00
BIO-152-6410	0.500	234.00	468.00	26	270.00	540.00	30	115.38	9.00
BIO-152-6412	0.500	234.00	468.00	26	252.00	504.00	28	107.69	8.40
BIO 152	1.800	954.00	530.00	106	1,053.00	585.00	117	110.38	35.10
BIO-180-5877	0.200	150.00	750.00	50	78.00	390.00	26	52.00	2.60
BIO 180	0.200	150.00	750.00	50	78.00	390.00	26	52.00	2.60
BIO-215-6420	0.283	75.00	265.02	15	70.00	247.35	14	93.33	2.33

BIO 215	0.283	75.00	265.02	15	70.00	247.35	14	93.33	2.33
BIO-230-5878	0.367	192.00	523.16	32	156.00	425.07	26	81.25	5.20
BIO 230	0.367	192.00	523.16	32	156.00	425.07	26	81.25	5.20
BIO-240-5880	0.417	224.00	537.17	32	238.00	570.74	34	106.25	7.93
BIO 240	0.417	224.00	537.17	32	238.00	570.74	34	106.25	7.93
BIO Total	**14.867**	**10,340.00**	**695.50**	**1806**	**10,460.00**	**703.57**	**1788**	**101.16**	**348.67**

APPENDIX 12

Department Equivalencies

BIOLOGY DEPARTMENT ARTICULATION WITH CSU/UC SYSTEMS *(from assist.org)*

SDSU		====Biological Sciences====		Grossmont College	
BIOL 100 & BIOL 100L Laboratory	General Biology (3) General Biology (1)	BIO 120	Principles of Biology	(4)
BIOL 203 & BIOL 203L Molecular Biology Laboratory	Principles of Cell and Molecular Biology (3) Principles of Cell and Molecular Biology (1)	BIO 230	Principles of Cellular, Molecular and Evolutionary Biology	(4)
BIOL 204 & BIOL 204L Biology Laboratory	Principles of Organismal Biology (3) Principles of Organismal Biology (1)	BIO 240	Principles of Ecology, Evolution, and Organismal Biology	(5)
BIOL 211 & BIOL 211L Microbiology Laboratory	Fundamentals of Microbiology (2) Fundamentals of Microbiology (2)	BIO 152	Paramedical Microbiology	(5)
BIOL 212	Human Anatomy (4)	BIO 140	Human Anatomy	(5)
* BIOL 212 & BIOL 261	Human Anatomy (4) Human Physiology (4)	BIO 144 & BIO 145	Anatomy and Physiology I (4) Anatomy and Physiology II (4)	
BIOL 215	Biostatistics (3)	BIO 215 **OR** ANTH 215 Same as: PSY 215, SOC 215 **OR** PSY 215 Same as: ANTH 215, SOC 215 **OR** SOC 215	Statistics for Life Sciences (3) Statistics for the Behavioral Sciences (3) Statistics for the Behavioral Sciences (3) Statistics for the Behavioral Sciences (3)	

			Same as: ANTH 215, PSY 215		
* BIOL 261	Human Physiology	(4)	BIO 141 & BIO 142	Human Physiology Human Physiology Laboratory	(3) (2)
SOC 201	Elementary Social Statistics	(3)	MATH 160	Elementary Statistics	(3)
			OR		
			ANTH 215	Statistics for the Behavioral Sciences	(3)
			Same as: PSY 215, SOC 215		
			OR		
			BIO 215	Statistics for Life Sciences	(3)
			OR		
			PSY 215	Statistics for the Behavioral Sciences	(3)
			Same as: ANTH 215, SOC 215		
			OR		
			SOC 215	Statistics for the Behavioral Sciences	(3)
			Same as: ANTH 215, PSY 215		
STAT 119 Business	Elementary Statistics for	(3)	ANTH 215	Statistics for the Behavioral Sciences	(3)
			Same as: PSY 215, SOC 215		
			OR		
			BIO 215	Statistics for Life Sciences	(3)
			OR		
			MATH 160	Elementary Statistics	(3)
			OR		
			PSY 215	Statistics for the Behavioral Sciences	(3)
			Same as: ANTH 215, SOC 215		
			OR		
			SOC 215	Statistics for the Behavioral Sciences	(3)
			Same as: ANTH 215, PSY 215		
STAT 250	Statistical Principles and Practices	(3)	ANTH 215	Statistics for the Behavioral Sciences	(3)
			Same as: PSY 215, SOC 215		
			OR		
			BIO 215	Statistics for Life Sciences	(3)
			OR		

			MATH 160	Elementary Statistics	(3)
			OR		
			PSY 215	Statistics for the Behavioral Sciences	(3)
			Same as: ANTH 215, SOC 215		
			OR		
			SOC 215	Statistics for the Behavioral Sciences	(3)
			Same as: ANTH 215, PSY 215		

END OF DEPARTMENT

* Sequence/courses must be completed at institution offering those courses.

Note: (1) This document represents what San Diego State University recognizes/accepts for course-to-course articulation with the institution identified above. (2) The transfer courses are acceptable as "comparable/equivalent" (in lieu of) to SDSU courses unless otherwise identified.
identified.

Articulation Agreement by Department
Effective during the 11-12 Academic Year
Based on the 11-12 UC Transfer Course Agreement

UCSD			====Biological Sciences==== Grossmont College		
BILD 1	The Cell	(4)	BIO 230	Principles of Cellular, Molecular and Evolutionary Biology	(4)
BILD 2	Multicellular Life	(4)	BIO 240	Principles of Ecology, Evolution, and Organismal Biology	(5)
BILD 3	Organismic and Evolutionary Biology	(4)	BIO 240	Principles of Ecology, Evolution, and Organismal Biology	(5)
BILD 10	Fundamental Concepts of Modern Biology	(4)	BIO 120	Principles of Biology	(4)

BILD 18	Human Impact on the Environment	(4)	BIO 112	Contemporary Issues in Environmental Resources	(3)
BILD 20	Human Genetics in Modern Society	(4)	NO COURSE ARTICULATED College does not offer comparable course.		
BILD 24	Biology of Human Reproduction	(4)	NO COURSE ARTICULATED College does not offer comparable course.		
BILD 30	Biology of Plagues: Past and Present	(4)	NO COURSE ARTICULATED College does not offer comparable course.		
COGS 14	Design and Analysis of Experiments	(4)	BIO 215 **OR** MATH 160 **OR** PSY 215 Same as: **OR** PSY 205	Statistics for Life Sciences Elementary Statistics Statistics for the Behavioral Sciences ANTH 215, SOC 215 Research Methods for Psychology	(3) (3) (3) (3)
PSYC 60	Introduction to Statistics	(4)	BIO 215 **OR** MATH 160 **OR** PSY 215 Same as:	Statistics for Life Sciences Elementary Statistics Statistics for the Behavioral Sciences ANTH 215, SOC 215	(3) (3) (3)

APPENDIX 13

Statistical Data: Outcomes Profile

Grossmont College Enrollment by Age: BIOLOGY

Enrollment by Age (Duplicated Student Counts)

Age	Fall 2006		Fall 2007		Fall 2008		Fall 2009		Fall 2010		Fall 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
19 or less	504	23.1 %	571	23.7 %	557	24.1 %	545	23.4 %	415	22.2 %	367	21.0 %
20-24	997	45.8 %	1,082	45.0 %	1,064	46.1 %	1,003	43.0 %	878	46.9 %	786	44.9 %
25-29	300	13.8 %	351	14.6 %	337	14.6 %	395	16.9 %	292	15.6 %	309	17.6 %
30-49	331	15.2 %	361	15.0 %	312	13.5 %	344	14.7 %	272	14.5 %	261	14.9 %
50+	47	2.2 %	41	1.7 %	39	1.7 %	46	2.0 %	15	0.8 %	28	1.6 %
Total	2,179	100.0 %	2,406	100.0 %	2,309	100.0 %	2,333	100.0 %	1,872	100.0 %	1,751	100.0 %

Enrollment by Age (Unduplicated Student Count)

Age	Fall 2006		Fall 2007		Fall 2008		Fall 2009		Fall 2010		Fall 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
19 or less	445	24.9 %	512	25.3 %	502	25.2 %	505	24.6 %	404	22.9 %	363	21.8 %
20-24	816	45.7 %	894	44.2 %	910	45.7 %	870	42.5 %	823	46.7 %	744	44.8 %
25-29	233	13.1 %	279	13.8 %	293	14.7 %	335	16.3 %	266	15.1 %	286	17.2 %
30-49	256	14.3 %	302	14.9 %	256	12.8 %	301	14.7 %	253	14.4 %	242	14.6 %
50+	35	2.0 %	34	1.7 %	32	1.6 %	38	1.9 %	15	0.9 %	27	1.6 %
Total	1,785	100.0 %	2,021	100.0 %	1,993	100.0 %	2,049	100.0 %	1,761	100.0 %	1,662	100.0 %

Enrollment by Age (Duplicated Student Counts)

Age	Spring 2006		Spring 2007		Spring 2008		Spring 2009		Spring 2010		Spring 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
19 or less	531	23.2 %	516	22.9 %	574	23.9 %	622	25.8 %	495	23.1 %	414	23.0 %
20-24	1,026	44.8 %	1,053	46.8 %	1,043	43.4 %	1,066	44.2 %	975	45.6 %	786	43.7 %
25-29	375	16.4 %	299	13.3 %	364	15.1 %	337	14.0 %	321	15.0 %	319	17.7 %

30-49	331	14.5 %	360	16.0 %	391	16.3 %	333	13.8 %	325	15.2 %	260	14.5 %
50+	26	1.1 %	24	1.1 %	33	1.4 %	55	2.3 %	24	1.1 %	19	1.1 %
Total	2,289	100.0 %	2,252	100.0 %	2,405	100.0 %	2,413	100.0 %	2,140	100.0 %	1,798	100.0 %

Enrollment by Age (Unduplicated Student Count)

Age	Spring 2006		Spring 2007		Spring 2008		Spring 2009		Spring 2010		Spring 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
19 or less	467	25.4 %	462	25.0 %	519	25.6 %	571	27.1 %	459	23.8 %	403	23.7 %
20-24	824	44.8 %	849	46.0 %	873	43.1 %	916	43.5 %	872	45.2 %	741	43.5 %
25-29	281	15.3 %	233	12.6 %	298	14.7 %	293	13.9 %	285	14.8 %	297	17.4 %
30-49	250	13.6 %	280	15.2 %	303	15.0 %	285	13.5 %	292	15.1 %	243	14.3 %
50+	19	1.0 %	21	1.1 %	32	1.6 %	42	2.0 %	21	1.1 %	19	1.1 %
Total	1,841	100.0 %	1,845	100.0 %	2,025	100.0 %	2,107	100.0 %	1,929	100.0 %	1,703	100.0 %

Enrollment by Age (Duplicated Student Counts)

Age	Summer 2006		Summer 2007		Summer 2008		Summer 2009		Summer 2010		Summer 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
19 or less	76	16.8 %	83	20.8 %	82	19.7 %	84	17.6 %	49	22.6 %	25	21.9 %
20-24	201	44.4 %	174	43.6 %	182	43.6 %	173	36.2 %	81	37.3 %	41	36.0 %
25-29	69	15.2 %	58	14.5 %	71	17.0 %	104	21.8 %	40	18.4 %	22	19.3 %
30-49	101	22.3 %	77	19.3 %	75	18.0 %	103	21.5 %	45	20.7 %	23	20.2 %
50+	6	1.3 %	7	1.8 %	7	1.7 %	14	2.9 %	2	0.9 %	3	2.6 %
Total	453	100.0 %	399	100.0 %	417	100.0 %	478	100.0 %	217	100.0 %	114	100.0 %

Enrollment by Age (Unduplicated Student Count)

Age	Summer 2006		Summer 2007		Summer 2008		Summer 2009		Summer 2010		Summer 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
19 or less	73	17.7 %	82	22.4 %	81	20.6 %	82	17.5 %	49	22.6 %	25	21.9 %
20-24	186	45.0 %	161	44.0 %	174	44.3 %	171	36.5 %	81	37.3 %	41	36.0 %
25-29	65	15.7 %	50	13.7 %	67	17.0 %	101	21.6 %	40	18.4 %	22	19.3 %
30-49	83	20.1 %	66	18.0 %	64	16.3 %	101	21.6 %	45	20.7 %	23	20.2 %

50+	6	1.5 %	7	1.9 %	7	1.8 %	13	2.8 %	2	0.9 %	3	2.6 %
Total	413	100.0 %	366	100.0 %	393	100.0 %	468	100.0 %	217	100.0 %	114	100.0 %

Grossmont College Enrollment by Ethnicity: BIOLOGY

Enrollment by Ethnicity (Duplicated Student Counts)

Ethnicity	Fall 2006		Fall 2007		Fall 2008		Fall 2009		Fall 2010		Fall 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
American Indian/Alaskan Native	18	0.8 %	14	0.6 %	24	1.0 %	15	0.6 %	8	0.4 %	8	0.5 %
Asian	171	7.8 %	202	8.4 %	177	7.7 %	185	7.9 %	127	6.8 %	124	7.1 %
Black non-Hispanic	132	6.1 %	140	5.8 %	135	5.8 %	156	6.7 %	133	7.1 %	120	6.9 %
Filipino	160	7.3 %	194	8.1 %	199	8.6 %	189	8.1 %	130	6.9 %	121	6.9 %
Hispanic	380	17.4 %	405	16.8 %	428	18.5 %	454	19.5 %	387	20.7 %	422	24.1 %
Not Reported	178	8.2 %	192	8.0 %	187	8.1 %	169	7.2 %	118	6.3 %	87	5.0 %
Pacific Islander	17	0.8 %	25	1.0 %	31	1.3 %	31	1.3 %	20	1.1 %	18	1.0 %
Two or More	59	2.7 %	53	2.2 %	46	2.0 %	63	2.7 %	80	4.3 %	94	5.4 %
White non-Hispanic	1,064	48.8 %	1,181	49.1 %	1,082	46.9 %	1,071	45.9 %	869	46.4 %	757	43.2 %
Total	2,179	100.0 %	2,406	100.0 %	2,309	100.0 %	2,333	100.0 %	1,872	100.0 %	1,751	100.0 %

Enrollment by Ethnicity (Unduplicated Student Counts)

Ethnicity	Fall 2006		Fall 2007		Fall 2008		Fall 2009		Fall 2010		Fall 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
American Indian/Alaskan Native	16	0.9 %	13	0.6 %	22	1.1 %	14	0.7 %	8	0.5 %	8	0.5 %
Asian	131	7.3 %	155	7.7 %	146	7.3 %	146	7.1 %	115	6.5 %	115	6.9 %
Black non-Hispanic	106	5.9 %	128	6.3 %	125	6.3 %	141	6.9 %	125	7.1 %	113	6.8 %
Filipino	125	7.0 %	138	6.8 %	158	7.9 %	156	7.6 %	117	6.6 %	114	6.9 %
Hispanic	324	18.2 %	351	17.4 %	379	19.0 %	407	19.9 %	369	21.0 %	402	24.2 %
Not Reported	148	8.3 %	158	7.8 %	161	8.1 %	139	6.8 %	112	6.4 %	81	4.9 %
Pacific Islander	14	0.8 %	24	1.2 %	30	1.5 %	26	1.3 %	19	1.1 %	18	1.1 %
Two or More	50	2.8 %	45	2.2 %	39	2.0 %	58	2.8 %	75	4.3 %	93	5.6 %

White non-Hispanic	871	48.8 %	1,009	49.9 %	933	46.8 %	962	46.9 %	821	46.6 %	718	43.2 %
Total	1,785	100.0 %	2,021	100.0 %	1,993	100.0 %	2,049	100.0 %	1,761	100.0 %	1,662	100.0 %

Enrollment by Ethnicity (Duplicated Student Counts)

Ethnicity	Spring 2006		Spring 2007		Spring 2008		Spring 2009		Spring 2010		Spring 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
American Indian/Alaskan Native	14	0.6 %	23	1.0 %	22	0.9 %	17	0.7 %	19	0.9 %	5	0.3 %
Asian	184	8.0 %	187	8.3 %	201	8.4 %	232	9.6 %	182	8.5 %	123	6.8 %
Black non-Hispanic	165	7.2 %	142	6.3 %	136	5.7 %	145	6.0 %	146	6.8 %	122	6.8 %
Filipino	161	7.0 %	167	7.4 %	194	8.1 %	178	7.4 %	150	7.0 %	133	7.4 %
Hispanic	372	16.3 %	374	16.6 %	404	16.8 %	412	17.1 %	429	20.0 %	408	22.7 %
Not Reported	163	7.1 %	212	9.4 %	206	8.6 %	199	8.2 %	153	7.1 %	95	5.3 %
Pacific Islander	36	1.6 %	26	1.2 %	31	1.3 %	28	1.2 %	25	1.2 %	16	0.9 %
Two or More	56	2.4 %	62	2.8 %	66	2.7 %	35	1.5 %	67	3.1 %	79	4.4 %
White non-Hispanic	1,138	49.7 %	1,059	47.0 %	1,145	47.6 %	1,167	48.4 %	969	45.3 %	817	45.4 %
Total	2,289	100.0 %	2,252	100.0 %	2,405	100.0 %	2,413	100.0 %	2,140	100.0 %	1,798	100.0 %

Enrollment by Ethnicity (Unduplicated Student Counts)

Ethnicity	Spring 2006		Spring 2007		Spring 2008		Spring 2009		Spring 2010		Spring 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
American Indian/Alaskan Native	13	0.7 %	18	1.0 %	18	0.9 %	15	0.7 %	16	0.8 %	5	0.3 %
Asian	143	7.8 %	146	7.9 %	168	8.3 %	191	9.1 %	149	7.7 %	113	6.6 %
Black non-Hispanic	139	7.6 %	120	6.5 %	121	6.0 %	130	6.2 %	134	6.9 %	113	6.6 %
Filipino	117	6.4 %	132	7.2 %	153	7.6 %	157	7.5 %	135	7.0 %	128	7.5 %
Hispanic	313	17.0 %	317	17.2 %	345	17.0 %	369	17.5 %	401	20.8 %	389	22.8 %
Not Reported	136	7.4 %	167	9.1 %	165	8.1 %	169	8.0 %	136	7.1 %	89	5.2 %
Pacific Islander	25	1.4 %	25	1.4 %	30	1.5 %	27	1.3 %	22	1.1 %	14	0.8 %
Two or More	43	2.3 %	52	2.8 %	57	2.8 %	30	1.4 %	61	3.2 %	75	4.4 %
White non-Hispanic	912	49.5 %	868	47.0 %	968	47.8 %	1,019	48.4 %	875	45.4 %	777	45.6 %
Total	1,841	100.0 %	1,845	100.0 %	2,025	100.0 %	2,107	100.0 %	1,929	100.0 %	1,703	100.0 %

Enrollment by Ethnicity (Duplicated Student Counts)

Ethnicity	Summer 2006		Summer 2007		Summer 2008		Summer 2009		Summer 2010		Summer 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
American Indian/Alaskan Native	1	0.2 %	7	1.8 %	4	1.0 %	3	0.6 %	1	0.5 %	2	1.8 %
Asian	39	8.6 %	33	8.3 %	31	7.4 %	44	9.2 %	16	7.4 %	7	6.1 %
Black non-Hispanic	37	8.2 %	44	11.0 %	37	8.9 %	56	11.7 %	31	14.3 %	15	13.2 %
Filipino	28	6.2 %	40	10.0 %	33	7.9 %	31	6.5 %	21	9.7 %	7	6.1 %
Hispanic	81	17.9 %	72	18.0 %	78	18.7 %	102	21.3 %	36	16.6 %	32	28.1 %
Not Reported	40	8.8 %	38	9.5 %	36	8.6 %	39	8.2 %	11	5.1 %	5	4.4 %
Pacific Islander	7	1.5 %	5	1.3 %	6	1.4 %	5	1.0 %	2	0.9 %	2	1.8 %
Two or More	15	3.3 %	10	2.5 %	16	3.8 %	10	2.1 %	11	5.1 %	3	2.6 %
White non-Hispanic	205	45.3 %	150	37.6 %	176	42.2 %	188	39.3 %	88	40.6 %	41	36.0 %
Total	453	100.0 %	399	100.0 %	417	100.0 %	478	100.0 %	217	100.0 %	114	100.0 %

Enrollment by Ethnicity (Unduplicated Student Counts)

Ethnicity	Summer 2006		Summer 2007		Summer 2008		Summer 2009		Summer 2010		Summer 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
American Indian/Alaskan Native	1	0.2 %	5	1.4 %	4	1.0 %	3	0.6 %	1	0.5 %	2	1.8 %
Asian	33	8.0 %	32	8.7 %	27	6.9 %	44	9.4 %	16	7.4 %	7	6.1 %
Black non-Hispanic	35	8.5 %	40	10.9 %	34	8.7 %	55	11.8 %	31	14.3 %	15	13.2 %
Filipino	25	6.1 %	35	9.6 %	30	7.6 %	28	6.0 %	21	9.7 %	7	6.1 %
Hispanic	76	18.4 %	66	18.0 %	74	18.8 %	99	21.2 %	36	16.6 %	32	28.1 %
Not Reported	37	9.0 %	37	10.1 %	34	8.7 %	38	8.1 %	11	5.1 %	5	4.4 %
Pacific Islander	5	1.2 %	4	1.1 %	6	1.5 %	5	1.1 %	2	0.9 %	2	1.8 %
Two or More	14	3.4 %	10	2.7 %	14	3.6 %	10	2.1 %	11	5.1 %	3	2.6 %
White non-Hispanic	187	45.3 %	137	37.4 %	170	43.3 %	186	39.7 %	88	40.6 %	41	36.0 %
Total	413	100.0 %	366	100.0 %	393	100.0 %	468	100.0 %	217	100.0 %	114	100.0 %

Grossmont College Enrollment by Gender: BIOLOGY

Enrollment by Gender (Duplicated Student Count)

Gender	Fall 2006		Fall 2007		Fall 2008		Fall 2009		Fall 2010		Fall 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
Female	1,467	67.3 %	1,605	66.7 %	1,523	66.0 %	1,524	65.3 %	1,263	67.5 %	1,125	64.2 %
Male	701	32.2 %	785	32.6 %	761	33.0 %	790	33.9 %	590	31.5 %	604	34.5 %
Not Reported	11	0.5 %	16	0.7 %	25	1.1 %	19	0.8 %	19	1.0 %	22	1.3 %
Total	2,179	100.0 %	2,406	100.0 %	2,309	100.0 %	2,333	100.0 %	1,872	100.0 %	1,751	100.0 %

Enrollment by Gender (Unduplicated Student Count)

Gender	Fall 2006		Fall 2007		Fall 2008		Fall 2009		Fall 2010		Fall 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
Female	1,179	66.1 %	1,339	66.3 %	1,306	65.5 %	1,346	65.7 %	1,177	66.8 %	1,057	63.6 %
Male	598	33.5 %	668	33.1 %	668	33.5 %	686	33.5 %	568	32.3 %	585	35.2 %
Not Reported	8	0.4 %	14	0.7 %	19	1.0 %	17	0.8 %	16	0.9 %	20	1.2 %
Total	1,785	100.0 %	2,021	100.0 %	1,993	100.0 %	2,049	100.0 %	1,761	100.0 %	1,662	100.0 %

Enrollment by Gender (Duplicated Student Count)

Gender	Spring 2006		Spring 2007		Spring 2008		Spring 2009		Spring 2010		Spring 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
Female	1,536	67.1 %	1,527	67.8 %	1,565	65.1 %	1,591	65.9 %	1,357	63.4 %	1,201	66.8 %
Male	746	32.6 %	708	31.4 %	823	34.2 %	798	33.1 %	766	35.8 %	575	32.0 %
Not Reported	7	0.3 %	17	0.8 %	17	0.7 %	24	1.0 %	17	0.8 %	22	1.2 %
Total	2,289	100.0 %	2,252	100.0 %	2,405	100.0 %	2,413	100.0 %	2,140	100.0 %	1,798	100.0 %

Enrollment by Gender (Unduplicated Student Count)

Gender	Spring 2006		Spring 2007		Spring 2008		Spring 2009		Spring 2010		Spring 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
Female	1,189	64.6 %	1,224	66.3 %	1,308	64.6 %	1,365	64.8 %	1,224	63.5 %	1,137	66.8 %
Male	645	35.0 %	609	33.0 %	704	34.8 %	721	34.2 %	691	35.8 %	545	32.0 %
Not Reported	7	0.4 %	12	0.7 %	13	0.6 %	21	1.0 %	14	0.7 %	21	1.2 %
Total	1,841	100.0 %	1,845	100.0 %	2,025	100.0 %	2,107	100.0 %	1,929	100.0 %	1,703	100.0 %

Enrollment by Gender (Duplicated Student Count)

Gender	Summer 2006		Summer 2007		Summer 2008		Summer 2009		Summer 2010		Summer 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
Female	352	77.7 %	290	72.7 %	304	72.9 %	347	72.6 %	140	64.5 %	56	49.1 %
Male	98	21.6 %	108	27.1 %	107	25.7 %	125	26.2 %	74	34.1 %	54	47.4 %
Not Reported	3	0.7 %	1	0.3 %	6	1.4 %	6	1.3 %	3	1.4 %	4	3.5 %
Total	453	100.0 %	399	100.0 %	417	100.0 %	478	100.0 %	217	100.0 %	114	100.0 %

Enrollment by Gender (Unduplicated Student Count)

Gender	Summer 2006		Summer 2007		Summer 2008		Summer 2009		Summer 2010		Summer 2011	
	n	%	n	%	n	%	n	%	n	%	n	%
Female	320	77.5 %	263	71.9 %	287	73.0 %	341	72.9 %	140	64.5 %	56	49.1 %
Male	90	21.8 %	102	27.9 %	102	26.0 %	122	26.1 %	74	34.1 %	54	47.4 %
Not Reported	3	0.7 %	1	0.3 %	4	1.0 %	5	1.1 %	3	1.4 %	4	3.5 %
Total	413	100.0 %	366	100.0 %	393	100.0 %	468	100.0 %	217	100.0 %	114	100.0 %

APPENDIX 14

Fiscal Year FTES Analysis by Program – Fall 2008

Top Code	Course	Total FTEF	Max WSCH	Max WSCH/FTEF	Earned WSCH	Earned WSCH/FTEF	% of Max
040100	BIO-105-2243	0.150	192.00	1,280.00	186.00	1,240.00	96.88
040100	BIO-105-2245	0.150	192.00	1,280.00	120.00	800.00	62.50
040100	BIO-105-2242	0.350	192.00	548.57	198.00	565.71	103.13
040100	BIO-105-2244	0.350	192.00	548.57	174.00	497.14	90.63
040100	BIO 105	1.000	768.00	768.00	678.00	678.00	88.28
040100	BIO-110-2232	0.150	192.00	1,280.00	150.00	1,000.00	78.13
040100	BIO-110-2235	0.150	192.00	1,280.00	222.00	1,480.00	115.63
040100	BIO-110-2237	0.150	192.00	1,280.00	144.00	960.00	75.00
040100	BIO-110-2238	0.150	192.00	1,280.00	168.00	1,120.00	87.50
040100	BIO-110-2229	0.350	192.00	548.57	156.00	445.71	81.25
040100	BIO-110-2231	0.350	192.00	548.57	174.00	497.14	90.63
040100	BIO-110-2234	0.350	192.00	548.57	174.00	497.14	90.63
040100	BIO-110-2236	0.350	192.00	548.57	210.00	600.00	109.38
040100	BIO-110-8749	0.350	192.00	548.57	60.00	171.43	31.25
040100	BIO 110	2.350	1,728.00	735.32	1,458.00	620.43	84.38
040100	BIO-112-2239	0.200	111.00	555.00	96.00	480.00	86.49
040100	BIO-112-2240	0.200	150.00	750.00	42.00	210.00	28.00
040100	BIO 112	0.400	261.00	652.50	138.00	345.00	52.87
040100	BIO-114-2241	0.200	96.00	480.00	45.00	225.00	46.88
040100	BIO 114	0.200	96.00	480.00	45.00	225.00	46.88
040100	BIO-118-2246	0.200	150.00	750.00	93.00	465.00	62.00

040100	BIO 118	0.200	150.00	750.00	93.00	465.00	62.00
040100	BIO-120-8873	0.000	0.00	0	6.00	0	0
040100	BIO-120-2248	0.150	192.00	1,280.00	192.00	1,280.00	100.00
040100	BIO-120-2249	0.150	192.00	1,280.00	252.00	1,680.00	131.25
040100	BIO-120-2252	0.150	192.00	1,280.00	228.00	1,520.00	118.75
040100	BIO-120-2254	0.150	192.00	1,280.00	240.00	1,600.00	125.00
040100	BIO-120-2256	0.150	192.00	1,280.00	204.00	1,360.00	106.25
040100	BIO-120-2261	0.150	192.00	1,280.00	192.00	1,280.00	100.00
040100	BIO-120-2265	0.150	192.00	1,280.00	264.00	1,760.00	137.50
040100	BIO-120-2267	0.150	192.00	1,280.00	228.00	1,520.00	118.75
040100	BIO-120-8751	0.150	192.00	1,280.00	228.00	1,520.00	118.75
040100	BIO-120-2247	0.350	192.00	548.57	252.00	720.00	131.25
040100	BIO-120-2250	0.350	192.00	548.57	198.00	565.71	103.13
040100	BIO-120-2251	0.350	192.00	548.57	246.00	702.86	128.13
040100	BIO-120-2253	0.350	192.00	548.57	234.00	668.57	121.88
040100	BIO-120-2255	0.350	192.00	548.57	270.00	771.43	140.63
040100	BIO-120-2257	0.350	192.00	548.57	264.00	754.29	137.50
040100	BIO-120-2258	0.350	192.00	548.57	276.00	788.57	143.75
040100	BIO-120-2259	0.350	192.00	548.57	210.00	600.00	109.38
040100	BIO-120-2260	0.350	192.00	548.57	174.00	497.14	90.63
040100	BIO-120-2263	0.350	192.00	548.57	210.00	600.00	109.38
040100	BIO-120-2264	0.350	192.00	548.57	270.00	771.43	140.63
040100	BIO-120-2266	0.350	192.00	548.57	168.00	480.00	87.50
040100	BIO 120	5.550	4,032.00	726.49	4,806.00	865.95	119.20

040100	BIO-140-2269	0.300	288.00	960.00	261.00	870.00	90.63
040100	BIO-140-2268	0.500	288.00	576.00	297.00	594.00	103.13
040100	BIO-140-2270	0.500	288.00	576.00	333.00	666.00	115.63
040100	BIO 140	1.300	864.00	664.62	891.00	685.38	103.13
040100	BIO-141-2271	0.200	180.00	900.00	171.00	855.00	95.00
040100	BIO-141-2272	0.200	150.00	750.00	138.00	690.00	92.00
040100	BIO-141-2273	0.200	135.00	675.00	120.00	600.00	88.89
040100	BIO 141	0.600	465.00	775.00	429.00	715.00	92.26
040100	BIO-142-2274	0.300	192.00	640.00	186.00	620.00	96.88
040100	BIO-142-2275	0.300	192.00	640.00	204.00	680.00	106.25
040100	BIO 142	0.600	384.00	640.00	390.00	650.00	101.56
040100	BIO-144-2277	0.150	192.00	1,280.00	192.00	1,280.00	100.00
040100	BIO-144-2280	0.150	192.00	1,280.00	162.00	1,080.00	84.38
040100	BIO-144-2276	0.350	192.00	548.57	192.00	548.57	100.00
040100	BIO-144-2278	0.350	192.00	548.57	156.00	445.71	81.25
040100	BIO-144-2279	0.350	192.00	548.57	192.00	548.57	100.00
040100	BIO 144	1.350	960.00	711.11	894.00	662.22	93.13
040100	BIO-145-2282	0.150	192.00	1,280.00	114.00	760.00	59.38
040100	BIO-145-2281	0.350	192.00	548.57	150.00	428.57	78.13
040100	BIO-145-2283	0.350	192.00	548.57	222.00	634.29	115.63
040100	BIO 145	0.850	576.00	677.65	486.00	571.76	84.38
040100	BIO-152-2286	0.300	234.00	780.00	243.00	810.00	103.85
040100	BIO-152-2288	0.300	234.00	780.00	243.00	810.00	103.85
040100	BIO-152-2284	0.500	234.00	468.00	252.00	504.00	107.69
040100	BIO-152-2285	0.500	234.00	468.00	252.00	504.00	107.69

040100	BIO-152-2287	0.500	234.00	468.00	252.00	504.00	107.69
040100	BIO 152	2.100	1,170.00	557.14	1,242.00	591.43	106.15
040100	BIO-210-2290	0.200	150.00	750.00	180.00	900.00	120.00
040100	BIO-210-2291	0.200	150.00	750.00	171.00	855.00	114.00
040100	BIO 210	0.400	300.00	750.00	351.00	877.50	117.00
040100	BIO-211-2292	0.167	96.00	574.85	102.00	610.78	106.25
040100	BIO-211-2293	0.167	96.00	574.85	102.00	610.78	106.25
040100	BIO 211	0.334	192.00	574.85	204.00	610.78	106.25
040100	BIO-212-2294	0.167	96.00	574.85	69.00	413.17	71.88
040100	BIO 212	0.167	96.00	574.85	69.00	413.17	71.88
040100	BIO-215-2295	0.283	150.00	530.04	60.00	212.01	40.00
040100	BIO 215	0.283	150.00	530.04	60.00	212.01	40.00
040100	BIO-220-2296	0.200	96.00	480.00	72.00	360.00	75.00
040100	BIO 220	0.200	96.00	480.00	72.00	360.00	75.00
040100	BIO-221-2297	0.167	90.00	538.92	66.00	395.21	73.33
040100	BIO 221	0.167	90.00	538.92	66.00	395.21	73.33
Fall 2008	BIO Total	**18.051**	**12,378.00**	**685.72**	**12,372.00**	**685.39**	**99.95**

Spring 2009

Top Code	Course	Total FTEF	Max WSCH	Max WSCH/FTEF	Earned WSCH	Earned WSCH/FTEF	% of Max
BIO							
040100	BIO-105-6367	0.150	192.00	1,280.00	150.00	1,000.00	78.13
040100	BIO-105-6369	0.150	192.00	1,280.00	192.00	1,280.00	100.00
040100	BIO-105-9130	0.150	192.00	1,280.00	180.00	1,200.00	93.75
040100	BIO-105-6366	0.350	192.00	548.57	150.00	428.57	78.13

040100	BIO-105-6368	0.350	192.00	548.57	186.00	531.43	96.88
040100	BIO-105-6370	0.350	192.00	548.57	162.00	462.86	84.38
040100	BIO 105	1.500	1,152.00	768.00	1,020.00	680.00	88.54
040100	BIO-110-6354	0.150	192.00	1,280.00	114.00	760.00	59.38
040100	BIO-110-6359	0.150	192.00	1,280.00	192.00	1,280.00	100.00
040100	BIO-110-6361	0.150	192.00	1,280.00	180.00	1,200.00	93.75
040100	BIO-110-6362	0.150	192.00	1,280.00	174.00	1,160.00	90.63
040100	BIO-110-6353	0.350	192.00	548.57	126.00	360.00	65.63
040100	BIO-110-6356	0.350	192.00	548.57	162.00	462.86	84.38
040100	BIO-110-6357	0.350	192.00	548.57	90.00	257.14	46.88
040100	BIO-110-6358	0.350	192.00	548.57	174.00	497.14	90.63
040100	BIO-110-6360	0.350	192.00	548.57	234.00	668.57	121.88
040100	BIO 110	2.350	1,728.00	735.32	1,446.00	615.32	83.68
040100	BIO-112-6363	0.200	105.00	525.00	99.00	495.00	94.29
040100	BIO-112-6364	0.200	75.00	375.00	57.00	285.00	76.00
040100	BIO 112	0.400	180.00	450.00	156.00	390.00	86.67
040100	BIO-114-6365	0.200	96.00	480.00	87.00	435.00	90.63
040100	BIO 114	0.200	96.00	480.00	87.00	435.00	90.63
040100	BIO-118-6371	0.200	78.00	390.00	87.00	435.00	111.54
040100	BIO-118-9183	0.200	75.00	375.00	66.00	330.00	88.00
040100	BIO 118	0.400	153.00	382.50	153.00	382.50	100.00
040100	BIO-120-9323	0.000	0.00	0	6.00	0	0
040100	BIO-120-6373	0.150	192.00	1,280.00	240.00	1,600.00	125.00
040100	BIO-120-6374	0.150	192.00	1,280.00	210.00	1,400.00	109.38
040100	BIO-120-6379	0.150	192.00	1,280.00	270.00	1,800.00	140.63

040100	BIO-120-6381	0.150	192.00	1,280.00	222.00	1,480.00	115.63
040100	BIO-120-6383	0.150	192.00	1,280.00	264.00	1,760.00	137.50
040100	BIO-120-6385	0.150	192.00	1,280.00	216.00	1,440.00	112.50
040100	BIO-120-6387	0.150	192.00	1,280.00	234.00	1,560.00	121.88
040100	BIO-120-6389	0.150	192.00	1,280.00	240.00	1,600.00	125.00
040100	BIO-120-6391	0.150	192.00	1,280.00	222.00	1,480.00	115.63
040100	BIO-120-8910	0.150	192.00	1,280.00	276.00	1,840.00	143.75
040100	BIO-120-6372	0.350	192.00	548.57	228.00	651.43	118.75
040100	BIO-120-6375	0.350	192.00	548.57	204.00	582.86	106.25
040100	BIO-120-6376	0.350	192.00	548.57	210.00	600.00	109.38
040100	BIO-120-6377	0.350	192.00	548.57	150.00	428.57	78.13
040100	BIO-120-6378	0.350	192.00	548.57	246.00	702.86	128.13
040100	BIO-120-6380	0.350	192.00	548.57	258.00	737.14	134.38
040100	BIO-120-6382	0.350	192.00	548.57	252.00	720.00	131.25
040100	BIO-120-6384	0.350	192.00	548.57	198.00	565.71	103.13
040100	BIO-120-6386	0.350	192.00	548.57	186.00	531.43	96.88
040100	BIO-120-6388	0.350	192.00	548.57	264.00	754.29	137.50
040100	BIO-120-6390	0.350	192.00	548.57	186.00	531.43	96.88
040100	BIO 120	5.350	4,032.00	753.64	4,782.00	893.83	118.60
040100	BIO-140-6393	0.300	288.00	960.00	279.00	930.00	96.88
040100	BIO-140-6392	0.500	288.00	576.00	288.00	576.00	100.00
040100	BIO-140-6394	0.500	288.00	576.00	351.00	702.00	121.88
040100	BIO 140	1.300	864.00	664.62	918.00	706.15	106.25
040100	BIO-141-6395	0.200	180.00	900.00	186.00	930.00	103.33

040100	BIO-141-6396	0.200	156.00	780.00	150.00	750.00	96.15
040100	BIO-141-6397	0.200	120.00	600.00	102.00	510.00	85.00
040100	BIO 141	0.600	456.00	760.00	438.00	730.00	96.05
040100	BIO-142-6398	0.300	192.00	640.00	204.00	680.00	106.25
040100	BIO-142-6399	0.300	192.00	640.00	204.00	680.00	106.25
040100	BIO 142	0.600	384.00	640.00	408.00	680.00	106.25
040100	BIO-144-6401	0.150	192.00	1,280.00	216.00	1,440.00	112.50
040100	BIO-144-6400	0.350	192.00	548.57	210.00	600.00	109.38
040100	BIO-144-6402	0.350	192.00	548.57	168.00	480.00	87.50
040100	BIO-144-6403	0.350	192.00	548.57	228.00	651.43	118.75
040100	BIO 144	1.200	768.00	640.00	822.00	685.00	107.03
040100	BIO-145-6405	0.150	192.00	1,280.00	132.00	880.00	68.75
040100	BIO-145-6407	0.150	192.00	1,280.00	174.00	1,160.00	90.63
040100	BIO-145-6404	0.350	192.00	548.57	186.00	531.43	96.88
040100	BIO-145-6406	0.350	192.00	548.57	174.00	497.14	90.63
040100	BIO 145	1.000	768.00	768.00	666.00	666.00	86.72
040100	BIO-152-6411	0.300	234.00	780.00	252.00	840.00	107.69
040100	BIO-152-6413	0.300	234.00	780.00	243.00	810.00	103.85
040100	BIO-152-6409	0.500	234.00	468.00	261.00	522.00	111.54
040100	BIO-152-6410	0.500	234.00	468.00	252.00	504.00	107.69
040100	BIO-152-6412	0.500	234.00	468.00	252.00	504.00	107.69
040100	BIO 152	2.100	1,170.00	557.14	1,260.00	600.00	107.69
040100	BIO-210-6415	0.200	150.00	750.00	165.00	825.00	110.00
040100	BIO-210-6416	0.200	150.00	750.00	168.00	840.00	112.00
040100	BIO 210	0.400	300.00	750.00	333.00	832.50	111.00

040100	BIO-211-6417	0.167	96.00	574.85	99.00	592.81	103.13
040100	BIO-211-6418	0.167	96.00	574.85	105.00	628.74	109.38
040100	BIO 211	0.334	192.00	574.85	204.00	610.78	106.25
040100	BIO-212-6419	0.167	96.00	574.85	93.00	556.89	96.88
040100	BIO 212	0.167	96.00	574.85	93.00	556.89	96.88
040100	BIO-215-9324	0.000	0.00	0	0.00	0	0
040100	BIO-215-6420	0.283	150.00	530.04	25.00	88.34	16.67
040100	BIO 215	0.283	150.00	530.04	25.00	88.34	16.67
040100	BIO-220-6421	0.200	96.00	480.00	60.00	300.00	62.50
040100	BIO 220	0.200	96.00	480.00	60.00	300.00	62.50
040100	BIO-221-6422	0.167	96.00	574.85	48.00	287.43	50.00
040100	BIO 221	0.167	96.00	574.85	48.00	287.43	50.00
	BIO Total	**18.551**	**12,681.00**	**683.58**	**12,919.00**	**696.40**	**101.88**
	BIO 221	0.167	96.00	574.85	32	48.00	287.43
Spring 2009	BIO Total	**18.551**	**12,681.00**	**683.58**	**2433**	**12,919.00**	**696.40**

Fall 2009

Top Code	Course	Total FTEF	Max WSCH	Max WSCH/FTEF	Earned WSCH	Earned WSCH/FTEF	% of Max
040100	BIO-105-2243	0.150	192.00	1,280.00	186.00	1,240.00	96.88
040100	BIO-105-2245	0.150	192.00	1,280.00	204.00	1,360.00	106.25
040100	BIO-105-9541	0.150	192.00	1,280.00	192.00	1,280.00	100.00
040100	BIO-105-2242	0.350	192.00	548.57	174.00	497.14	90.63

040100	BIO-105-2244	0.350	192.00	548.57	192.00	548.57	100.00
040100	BIO-105-9540	0.350	192.00	548.57	186.00	531.43	96.88
040100	BIO 105	1.500	1,152.00	768.00	1,134.00	756.00	98.44
040100	BIO-110-2232	0.150	192.00	1,280.00	156.00	1,040.00	81.25
040100	BIO-110-2235	0.150	192.00	1,280.00	186.00	1,240.00	96.88
040100	BIO-110-2237	0.150	96.00	640.00	93.00	620.00	96.88
040100	BIO-110-2231	0.350	192.00	548.57	180.00	514.29	93.75
040100	BIO-110-2234	0.350	192.00	548.57	192.00	548.57	100.00
040100	BIO-110-2236	0.350	192.00	548.57	204.00	582.86	106.25
040100	BIO 110	1.500	1,056.00	704.00	1,011.00	674.00	95.74
040100	BIO-112-2239	0.200	111.00	555.00	117.00	585.00	105.41
040100	BIO 112	0.200	111.00	555.00	117.00	585.00	105.41
040100	BIO-114-2241	0.200	96.00	480.00	96.00	480.00	100.00
040100	BIO 114	0.200	96.00	480.00	96.00	480.00	100.00
040100	BIO-118-2246	0.200	150.00	750.00	138.00	690.00	92.00
040100	BIO-118-9546	0.200	75.00	375.00	69.00	345.00	92.00
040100	BIO 118	0.400	225.00	562.50	207.00	517.50	92.00
040100	BIO-120-9835	0.000	0.00	0	6.00	0	0
040100	BIO-120-2248	0.150	192.00	1,280.00	234.00	1,560.00	121.88
040100	BIO-120-2249	0.150	192.00	1,280.00	264.00	1,760.00	137.50
040100	BIO-120-2252	0.150	192.00	1,280.00	240.00	1,600.00	125.00
040100	BIO-120-2254	0.150	192.00	1,280.00	228.00	1,520.00	118.75
040100	BIO-120-2256	0.150	192.00	1,280.00	210.00	1,400.00	109.38
040100	BIO-120-2257	0.150	192.00	1,280.00	240.00	1,600.00	125.00
040100	BIO-120-2258	0.150	192.00	1,280.00	258.00	1,720.00	134.38

040100	BIO-120-2261	0.150	192.00	1,280.00	246.00	1,640.00	128.13
040100	BIO-120-2265	0.150	192.00	1,280.00	240.00	1,600.00	125.00
040100	BIO-120-2267	0.150	192.00	1,280.00	240.00	1,600.00	125.00
040100	BIO-120-2247	0.350	192.00	548.57	228.00	651.43	118.75
040100	BIO-120-2251	0.350	192.00	548.57	252.00	720.00	131.25
040100	BIO-120-2253	0.350	192.00	548.57	228.00	651.43	118.75
040100	BIO-120-2255	0.350	192.00	548.57	252.00	720.00	131.25
040100	BIO-120-2260	0.350	192.00	548.57	210.00	600.00	109.38
040100	BIO-120-2263	0.350	192.00	548.57	216.00	617.14	112.50
040100	BIO-120-2264	0.350	192.00	548.57	258.00	737.14	134.38
040100	BIO-120-2266	0.350	192.00	548.57	210.00	600.00	109.38
040100	BIO-120-8751	0.350	192.00	548.57	246.00	702.86	128.13
040100	BIO 120	4.650	3,648.00	784.52	4,506.00	969.03	123.52
040100	BIO-140-2269	0.300	288.00	960.00	279.00	930.00	96.88
040100	BIO-140-2268	0.500	288.00	576.00	342.00	684.00	118.75
040100	BIO-140-2270	0.500	288.00	576.00	351.00	702.00	121.88
040100	BIO 140	1.300	864.00	664.62	972.00	747.69	112.50
040100	BIO-141-2271	0.200	180.00	900.00	219.00	1,095.00	121.67
040100	BIO-141-2272	0.200	150.00	750.00	165.00	825.00	110.00
040100	BIO-141-2273	0.200	135.00	675.00	132.00	660.00	97.78
040100	BIO-141-9547	0.200	75.00	375.00	93.00	465.00	124.00
040100	BIO 141	0.800	540.00	675.00	609.00	761.25	112.78
040100	BIO-142-2274	0.300	192.00	640.00	216.00	720.00	112.50
040100	BIO-142-2275	0.300	192.00	640.00	192.00	640.00	100.00

040100	BIO 142	0.600	384.00	640.00	408.00	680.00	106.25
040100	BIO-144-2277	0.150	192.00	1,280.00	222.00	1,480.00	115.63
040100	BIO-144-2280	0.150	192.00	1,280.00	228.00	1,520.00	118.75
040100	BIO-144-2276	0.350	192.00	548.57	216.00	617.14	112.50
040100	BIO-144-2278	0.350	192.00	548.57	192.00	548.57	100.00
040100	BIO-144-2279	0.350	192.00	548.57	204.00	582.86	106.25
040100	BIO 144	1.350	960.00	711.11	1,062.00	786.67	110.63
040100	BIO-145-2282	0.350	192.00	548.57	132.00	377.14	68.75
040100	BIO-145-2283	0.350	192.00	548.57	222.00	634.29	115.63
040100	BIO 145	0.700	384.00	548.57	354.00	505.71	92.19
040100	BIO-152-2286	0.300	252.00	840.00	270.00	900.00	107.14
040100	BIO-152-2284	0.500	252.00	504.00	270.00	540.00	107.14
040100	BIO-152-2285	0.500	252.00	504.00	270.00	540.00	107.14
040100	BIO-152-2287	0.500	252.00	504.00	252.00	504.00	100.00
040100	BIO 152	1.800	1,008.00	560.00	1,062.00	590.00	105.36
040100	BIO-210-2290	0.200	150.00	750.00	165.00	825.00	110.00
040100	BIO-210-2291	0.200	150.00	750.00	150.00	750.00	100.00
040100	BIO 210	0.400	300.00	750.00	315.00	787.50	105.00
040100	BIO-211-2292	0.167	96.00	574.85	102.00	610.78	106.25
040100	BIO-211-2293	0.167	96.00	574.85	105.00	628.74	109.38
040100	BIO 211	0.334	192.00	574.85	207.00	619.76	107.81
040100	BIO-212-2294	0.167	96.00	574.85	93.00	556.89	96.88
040100	BIO 212	0.167	96.00	574.85	93.00	556.89	96.88
040100	BIO-220-2296	0.200	96.00	480.00	48.00	240.00	50.00
040100	BIO 220	0.200	96.00	480.00	48.00	240.00	50.00

040100	BIO-221-2297	0.167	90.00	538.92	45.00	269.46	50.00
040100	BIO 221	0.167	90.00	538.92	45.00	269.46	50.00
Fall 2009	BIO Total	**16.268**	**11,202.00**	**688.59**	**12,246.00**	**752.77**	**109.32**

Spring 2010

Top Code	Course	Total FTEF	Max WSCH	Max WSCH/FTEF	Earned WSCH	Earned WSCH/FTEF	% of Max
040100	BIO-105-6367	0.150	192.00	1,280.00	186.00	1,240.00	96.88
040100	BIO-105-6369	0.150	192.00	1,280.00	174.00	1,160.00	90.63
040100	BIO-105-9130	0.150	192.00	1,280.00	192.00	1,280.00	100.00
040100	BIO-105-6366	0.350	192.00	548.57	168.00	480.00	87.50
040100	BIO-105-6368	0.350	192.00	548.57	180.00	514.29	93.75
040100	BIO-105-6370	0.350	192.00	548.57	186.00	531.43	96.88
040100	BIO 105	1.500	1,152.00	768.00	1,086.00	724.00	94.27
040100	BIO-110-6357	0.150	192.00	1,280.00	198.00	1,320.00	103.13
040100	BIO-110-6359	0.150	192.00	1,280.00	192.00	1,280.00	100.00
040100	BIO-110-6361	0.150	192.00	1,280.00	192.00	1,280.00	100.00
040100	BIO-110-6356	0.350	192.00	548.57	204.00	582.86	106.25
040100	BIO-110-6358	0.350	192.00	548.57	192.00	548.57	100.00
040100	BIO-110-6360	0.350	192.00	548.57	210.00	600.00	109.38
040100	BIO 110	1.500	1,152.00	768.00	1,188.00	792.00	103.13
040100	BIO-112-6363	0.200	105.00	525.00	111.00	555.00	105.71
040100	BIO 112	0.200	105.00	525.00	111.00	555.00	105.71
040100	BIO-114-6365	0.200	96.00	480.00	93.00	465.00	96.88

040100	BIO 114	0.200	96.00	480.00	93.00	465.00	96.88
040100	BIO-118-6371	0.200	78.00	390.00	87.00	435.00	111.54
040100	BIO-118-9183	0.200	75.00	375.00	78.00	390.00	104.00
040100	BIO 118	0.400	153.00	382.50	165.00	412.50	107.84
040100	BIO-120-6373	0.150	192.00	1,280.00	240.00	1,600.00	125.00
040100	BIO-120-6374	0.150	192.00	1,280.00	246.00	1,640.00	128.13
040100	BIO-120-6379	0.150	192.00	1,280.00	258.00	1,720.00	134.38
040100	BIO-120-6381	0.150	192.00	1,280.00	228.00	1,520.00	118.75
040100	BIO-120-6383	0.150	192.00	1,280.00	252.00	1,680.00	131.25
040100	BIO-120-6385	0.150	192.00	1,280.00	228.00	1,520.00	118.75
040100	BIO-120-6387	0.150	192.00	1,280.00	234.00	1,560.00	121.88
040100	BIO-120-6389	0.150	192.00	1,280.00	240.00	1,600.00	125.00
040100	BIO-120-6391	0.150	192.00	1,280.00	180.00	1,200.00	93.75
040100	BIO-120-6372	0.350	192.00	548.57	258.00	737.14	134.38
040100	BIO-120-6378	0.350	192.00	548.57	216.00	617.14	112.50
040100	BIO-120-6380	0.350	192.00	548.57	270.00	771.43	140.63
040100	BIO-120-6382	0.350	192.00	548.57	228.00	651.43	118.75
040100	BIO-120-6384	0.350	192.00	548.57	216.00	617.14	112.50
040100	BIO-120-6386	0.350	192.00	548.57	210.00	600.00	109.38
040100	BIO-120-6388	0.350	192.00	548.57	258.00	737.14	134.38
040100	BIO-120-6390	0.350	192.00	548.57	162.00	462.86	84.38
040100	BIO 120	4.150	3,264.00	786.51	3,924.00	945.54	120.22
040100	BIO-140-6393	0.300	288.00	960.00	315.00	1,050.00	109.38
040100	BIO-140-6392	0.500	288.00	576.00	333.00	666.00	115.63

040100	BIO-140-6394	0.500	288.00	576.00	351.00	702.00	121.88
040100	BIO 140	1.300	864.00	664.62	999.00	768.46	115.63
040100	BIO-141-6395	0.200	150.00	750.00	201.00	1,005.00	134.00
040100	BIO-141-6396	0.200	150.00	750.00	192.00	960.00	128.00
040100	BIO-141-6397	0.200	135.00	675.00	105.00	525.00	77.78
040100	BIO 141	0.600	435.00	725.00	498.00	830.00	114.48
040100	BIO-142-6398	0.300	192.00	640.00	174.00	580.00	90.63
040100	BIO-142-6399	0.300	192.00	640.00	222.00	740.00	115.63
040100	BIO 142	0.600	384.00	640.00	396.00	660.00	103.13
040100	BIO-144-6401	0.150	192.00	1,280.00	234.00	1,560.00	121.88
040100	BIO-144-6400	0.350	192.00	548.57	228.00	651.43	118.75
040100	BIO-144-6402	0.350	192.00	548.57	204.00	582.86	106.25
040100	BIO-144-6403	0.350	192.00	548.57	222.00	634.29	115.63
040100	BIO 144	1.200	768.00	640.00	888.00	740.00	115.63
040100	BIO-145-6407	0.150	192.00	1,280.00	186.00	1,240.00	96.88
040100	BIO-145-0005	0.350	192.00	548.57	108.00	308.57	56.25
040100	BIO-145-6405	0.350	192.00	548.57	186.00	531.43	96.88
040100	BIO-145-6406	0.350	192.00	548.57	180.00	514.29	93.75
040100	BIO 145	1.200	768.00	640.00	660.00	550.00	85.94
040100	BIO-152-6411	0.300	234.00	780.00	261.00	870.00	111.54
040100	BIO-152-6409	0.500	243.00	486.00	261.00	522.00	107.41
040100	BIO-152-6410	0.500	234.00	468.00	270.00	540.00	115.38
040100	BIO-152-6412	0.500	234.00	468.00	252.00	504.00	107.69
040100	BIO 152	1.800	945.00	525.00	1,044.00	580.00	110.48
040100	BIO-210-6415	0.200	150.00	750.00	102.00	510.00	68.00

040100	BIO-210-6416	0.200	150.00	750.00	132.00	660.00	88.00
040100	BIO 210	0.400	300.00	750.00	234.00	585.00	78.00
040100	BIO-211-6417	0.167	96.00	574.85	105.00	628.74	109.38
040100	BIO-211-6418	0.167	96.00	574.85	105.00	628.74	109.38
040100	BIO 211	0.334	192.00	574.85	210.00	628.74	109.38
040100	BIO-212-6419	0.167	96.00	574.85	126.00	754.49	131.25
040100	BIO 212	0.167	96.00	574.85	126.00	754.49	131.25
040100	BIO-215-6420	0.283	60.00	212.01	65.00	229.68	108.33
040100	BIO 215	0.283	60.00	212.01	65.00	229.68	108.33
040100	BIO-220-6421	0.200	72.00	360.00	78.00	390.00	108.33
040100	BIO 220	0.200	72.00	360.00	78.00	390.00	108.33
040100	BIO-221-6422	0.167	72.00	431.14	75.00	449.10	104.17
040100	BIO 221	0.167	72.00	431.14	75.00	449.10	104.17
Spring 2010	BIO Total	**16.201**	**10,878.00**	**671.44**	**11,840.00**	**730.82**	**108.84**

Fall 2010

Top Code	Course	Total FTEF	Max WSCH	Max WSCH/FTEF	Earned WSCH	Earned WSCH/FTEF	% of Max
040100	BIO-105-2243	0.150	192.00	1,280.00	204.00	1,360.00	106.25
040100	BIO-105-2245	0.150	192.00	1,280.00	180.00	1,200.00	93.75
040100	BIO-105-9541	0.150	192.00	1,280.00	192.00	1,280.00	100.00
040100	BIO-105-2242	0.350	192.00	548.57	204.00	582.86	106.25
040100	BIO-105-2244	0.350	192.00	548.57	192.00	548.57	100.00

040100	BIO-105-9540	0.350	192.00	548.57	186.00	531.43	96.88
040100	BIO 105	1.500	1,152.00	768.00	1,158.00	772.00	100.52
040100	BIO-110-2232	0.150	192.00	1,280.00	216.00	1,440.00	112.50
040100	BIO-110-2235	0.150	192.00	1,280.00	210.00	1,400.00	109.38
040100	BIO-110-2237	0.150	96.00	640.00	93.00	620.00	96.88
040100	BIO-110-2231	0.350	192.00	548.57	192.00	548.57	100.00
040100	BIO-110-2234	0.350	192.00	548.57	186.00	531.43	96.88
040100	BIO-110-2236	0.350	192.00	548.57	192.00	548.57	100.00
040100	BIO 110	1.500	1,056.00	704.00	1,089.00	726.00	103.13
040100	BIO-112-2239	0.200	150.00	750.00	153.00	765.00	102.00
040100	BIO 112	0.200	150.00	750.00	153.00	765.00	102.00
040100	BIO-114-2241	0.200	96.00	480.00	96.00	480.00	100.00
040100	BIO 114	0.200	96.00	480.00	96.00	480.00	100.00
040100	BIO-118-9546	0.200	75.00	375.00	69.00	345.00	92.00
040100	BIO 118	0.200	75.00	375.00	69.00	345.00	92.00
040100	BIO-120-2248	0.150	192.00	1,280.00	216.00	1,440.00	112.50
040100	BIO-120-2249	0.150	192.00	1,280.00	216.00	1,440.00	112.50
040100	BIO-120-2252	0.150	192.00	1,280.00	216.00	1,440.00	112.50
040100	BIO-120-2254	0.150	192.00	1,280.00	228.00	1,520.00	118.75
040100	BIO-120-2256	0.150	192.00	1,280.00	222.00	1,480.00	115.63
040100	BIO-120-2261	0.150	192.00	1,280.00	246.00	1,640.00	128.13
040100	BIO-120-2265	0.150	192.00	1,280.00	240.00	1,600.00	125.00
040100	BIO-120-2267	0.150	192.00	1,280.00	222.00	1,480.00	115.63
040100	BIO-120-2247	0.350	192.00	548.57	216.00	617.14	112.50
040100	BIO-120-2251	0.350	192.00	548.57	210.00	600.00	109.38

040100	BIO-120-2253	0.350	192.00	548.57	222.00	634.29	115.63
040100	BIO-120-2255	0.350	192.00	548.57	234.00	668.57	121.88
040100	BIO-120-2260	0.350	192.00	548.57	228.00	651.43	118.75
040100	BIO-120-2264	0.350	192.00	548.57	234.00	668.57	121.88
040100	BIO-120-2266	0.350	192.00	548.57	222.00	634.29	115.63
040100	BIO 120	3.650	2,880.00	789.04	3,372.00	923.84	117.08
040100	BIO-140-2269	0.300	288.00	960.00	324.00	1,080.00	112.50
040100	BIO-140-2268	0.500	288.00	576.00	279.00	558.00	96.88
040100	BIO-140-2270	0.500	288.00	576.00	324.00	648.00	112.50
040100	BIO 140	1.300	864.00	664.62	927.00	713.08	107.29
040100	BIO-141-2271	0.200	210.00	1,050.00	207.00	1,035.00	98.57
040100	BIO-141-2272	0.200	240.00	1,200.00	213.00	1,065.00	88.75
040100	BIO-141-2273	0.200	135.00	675.00	126.00	630.00	93.33
040100	BIO-141-9547	0.200	75.00	375.00	87.00	435.00	116.00
040100	BIO 141	0.800	660.00	825.00	633.00	791.25	95.91
040100	BIO-142-2274	0.300	192.00	640.00	204.00	680.00	106.25
040100	BIO-142-2275	0.300	192.00	640.00	150.00	500.00	78.13
040100	BIO 142	0.600	384.00	640.00	354.00	590.00	92.19
040100	BIO-144-2277	0.150	192.00	1,280.00	234.00	1,560.00	121.88
040100	BIO-144-2276	0.350	192.00	548.57	210.00	600.00	109.38
040100	BIO-144-2278	0.350	192.00	548.57	180.00	514.29	93.75
040100	BIO-144-2280	0.350	192.00	548.57	252.00	720.00	131.25
040100	BIO 144	1.200	768.00	640.00	876.00	730.00	114.06
040100	BIO-145-5394	0.150	192.00	1,280.00	180.00	1,200.00	93.75
040100	BIO-145-2282	0.350	192.00	548.57	114.00	325.71	59.38

040100	BIO-145-2283	0.350	192.00	548.57	180.00	514.29	93.75
040100	BIO 145	0.850	576.00	677.65	474.00	557.65	82.29
040100	BIO-152-2286	0.300	252.00	840.00	261.00	870.00	103.57
040100	BIO-152-2284	0.500	252.00	504.00	252.00	504.00	100.00
040100	BIO-152-2285	0.500	252.00	504.00	252.00	504.00	100.00
040100	BIO-152-2287	0.500	252.00	504.00	261.00	522.00	103.57
040100	BIO 152	1.800	1,008.00	560.00	1,026.00	570.00	101.79
040100	BIO-180-5395	0.200	150.00	750.00	81.00	405.00	54.00
040100	BIO 180	0.200	150.00	750.00	81.00	405.00	54.00
040100	BIO-230-5396	0.367	180.00	490.46	120.00	326.98	66.67
040100	BIO 230	0.367	180.00	490.46	120.00	326.98	66.67
040100	BIO-240-5397	0.417	224.00	537.17	266.00	637.89	118.75
040100	BIO 240	0.417	224.00	537.17	266.00	637.89	118.75
Fall 2010	BIO Total	**14.784**	**10,223.00**	**691.49**	**10,694.00**	**723.35**	**104.61**

Spring 2011

Top Code	Course	Total FTEF	Max WSCH	Max WSCH/FTEF	Earned WSCH	Earned WSCH/FTEF	% of Max
040100	BIO-105-6367	0.150	192.00	1,280.00	192.00	1,280.00	100.00
040100	BIO-105-6369	0.150	192.00	1,280.00	192.00	1,280.00	100.00
040100	BIO-105-6370	0.150	192.00	1,280.00	156.00	1,040.00	81.25
040100	BIO-105-6366	0.350	192.00	548.57	150.00	428.57	78.13
040100	BIO-105-6368	0.350	192.00	548.57	168.00	480.00	87.50
040100	BIO-105-9130	0.350	192.00	548.57	186.00	531.43	96.88
040100	BIO 105	1.500	1,152.00	768.00	1,044.00	696.00	90.63
040100	BIO-110-6357	0.150	192.00	1,280.00	174.00	1,160.00	90.63

040100	BIO-110-6359	0.150	192.00	1,280.00	192.00	1,280.00	100.00
040100	BIO-110-6361	0.150	192.00	1,280.00	174.00	1,160.00	90.63
040100	BIO-110-6356	0.350	192.00	548.57	192.00	548.57	100.00
040100	BIO-110-6358	0.350	192.00	548.57	186.00	531.43	96.88
040100	BIO-110-6360	0.350	192.00	548.57	192.00	548.57	100.00
040100	BIO 110	1.500	1,152.00	768.00	1,110.00	740.00	96.35
040100	BIO-112-6363	0.200	150.00	750.00	174.00	870.00	116.00
040100	BIO 112	0.200	150.00	750.00	174.00	870.00	116.00
040100	BIO-114-6365	0.200	96.00	480.00	87.00	435.00	90.63
040100	BIO 114	0.200	96.00	480.00	87.00	435.00	90.63
040100	BIO-118-9183	0.200	108.00	540.00	81.00	405.00	75.00
040100	BIO 118	0.200	108.00	540.00	81.00	405.00	75.00
040100	BIO-120-6373	0.150	192.00	1,280.00	216.00	1,440.00	112.50
040100	BIO-120-6374	0.150	192.00	1,280.00	216.00	1,440.00	112.50
040100	BIO-120-6379	0.150	192.00	1,280.00	228.00	1,520.00	118.75
040100	BIO-120-6383	0.150	192.00	1,280.00	216.00	1,440.00	112.50
040100	BIO-120-6385	0.150	192.00	1,280.00	234.00	1,560.00	121.88
040100	BIO-120-6387	0.150	192.00	1,280.00	198.00	1,320.00	103.13
040100	BIO-120-6389	0.150	192.00	1,280.00	252.00	1,680.00	131.25
040100	BIO-120-6391	0.150	192.00	1,280.00	216.00	1,440.00	112.50
040100	BIO-120-6372	0.350	192.00	548.57	216.00	617.14	112.50
040100	BIO-120-6378	0.350	192.00	548.57	228.00	651.43	118.75
040100	BIO-120-6382	0.350	192.00	548.57	216.00	617.14	112.50
040100	BIO-120-6384	0.350	192.00	548.57	228.00	651.43	118.75

040100	BIO-120-6386	0.350	192.00	548.57	198.00	565.71	103.13
040100	BIO-120-6388	0.350	192.00	548.57	276.00	788.57	143.75
040100	BIO-120-6390	0.350	192.00	548.57	204.00	582.86	106.25
040100	BIO 120	3.650	2,880.00	789.04	3,342.00	915.62	116.04
040100	BIO-140-6393	0.300	288.00	960.00	279.00	930.00	96.88
040100	BIO-140-6392	0.500	288.00	576.00	324.00	648.00	112.50
040100	BIO-140-6394	0.500	288.00	576.00	297.00	594.00	103.13
040100	BIO 140	1.300	864.00	664.62	900.00	692.31	104.17
040100	BIO-141-6395	0.200	225.00	1,125.00	198.00	990.00	88.00
040100	BIO-141-6396	0.200	240.00	1,200.00	192.00	960.00	80.00
040100	BIO-141-6397	0.200	150.00	750.00	129.00	645.00	86.00
040100	BIO 141	0.600	615.00	1,025.00	519.00	865.00	84.39
040100	BIO-142-6398	0.300	192.00	640.00	102.00	340.00	53.13
040100	BIO-142-6399	0.300	192.00	640.00	246.00	820.00	128.13
040100	BIO 142	0.600	384.00	640.00	348.00	580.00	90.63
040100	BIO-144-6401	0.150	192.00	1,280.00	222.00	1,480.00	115.63
040100	BIO-144-6400	0.350	192.00	548.57	210.00	600.00	109.38
040100	BIO-144-6402	0.350	192.00	548.57	150.00	428.57	78.13
040100	BIO-144-6403	0.350	192.00	548.57	192.00	548.57	100.00
040100	BIO 144	1.200	768.00	640.00	774.00	645.00	100.78
040100	BIO-145-6406	0.150	192.00	1,280.00	114.00	760.00	59.38
040100	BIO-145-6405	0.350	192.00	548.57	156.00	445.71	81.25
040100	BIO-145-6407	0.350	192.00	548.57	216.00	617.14	112.50
040100	BIO 145	0.850	576.00	677.65	486.00	571.76	84.38
040100	BIO-152-6411	0.300	234.00	780.00	261.00	870.00	111.54

040100	BIO-152-6409	0.500	252.00	504.00	270.00	540.00	107.14
040100	BIO-152-6410	0.500	234.00	468.00	270.00	540.00	115.38
040100	BIO-152-6412	0.500	234.00	468.00	252.00	504.00	107.69
040100	BIO 152	1.800	954.00	530.00	1,053.00	585.00	110.38
040100	BIO-180-5877	0.200	150.00	750.00	78.00	390.00	52.00
040100	BIO 180	0.200	150.00	750.00	78.00	390.00	52.00
040100	BIO-215-6420	0.283	75.00	265.02	70.00	247.35	93.33
040100	BIO 215	0.283	75.00	265.02	70.00	247.35	93.33
040100	BIO-230-5878	0.367	192.00	523.16	156.00	425.07	81.25
040100	BIO 230	0.367	192.00	523.16	156.00	425.07	81.25
040100	BIO-240-5880	0.417	224.00	537.17	238.00	570.74	106.25
040100	BIO 240	0.417	224.00	537.17	238.00	570.74	106.25
Spring 2011	BIO Total	**14.867**	**10,340.00**	**695.50**	**10,460.00**	**703.57**	**101.16**

SUMMARY

Semester	Department	Total FTEF	Max WSCH	Max WSCH/FTEF	Earned WSCH	Earned WSCH/FTEF	% of Max
FA 2005	BIO Total	15.368	10988.00	714.99	11113.00	723.12	101.13
SP 2006	BIO Total	15.568	11051.00	709.85	10970.00	704.65	99.26
FA 2006	BIO Total	15.917	11332.00	711.94	10797.00	678.33	95.27
SP 2007	BIO Total	17.068	11795.00	691.05	11463.00	671.60	97.18
FA 2007	BIO Total	18.001	12578.00	698.73	12514.00	695.18	99.49
SP 2008	BIO Total	17.610	12480.00	708.66	12315.00	699.29	98.67
FA 2008	BIO Total	18.051	12,378.00	685.72	12,372.00	685.39	99.95
SP 2009	BIO Total	18.551	12,681.00	683.58	12,919.00	696.4	101.87
FA 2009	BIO Total	16.268	11,202.00	688.59	12,246.00	752.77	109.32
SP 2010	BIO Total	16.201	10,878.00	671.44	11,840.00	730.82	108.84
FA2010	BIO Total	14.784	10,223.00	691.49	10,694.00	723.35	104.61
SP 2011	BIO Total	14.867	10,340.00	695.50	10,460.00	703.57	101.16

APPENDIX 15: Fiscal Data: Outcomes Profile

1. Semester/Year	F05	S06	F06	S07	F07	S08	F08	S09	F09	S10	F10	S11
2. Enrollment	1838	2248	2181	2252	2406	2405	2309	2413	2240	2140	1872	1798
3. Earned WSCH/FTEF	723.12	704.65	678.33	671.60	695.18	699.29	685.39	696.40	752.77	730.82	723.35	703.57
4. Total FTES	749.26		755.78		823.62		843.03		802.87		705.14	
5. Cost/FTES	1,607.67		1,666.89		1,734.66		1,729.36		1,591.27		1,781.77	
6. Total Cost/Fiscal Year	1,312,504		1,374,682		1,559,058		1,584,489		1,414,587		1,256,383	
7. Total Revenue	3,367,714 (4494/FTES)		3,1165,981 (4123/FTES)		3,759,685 (4564.83/FTES)		3,848,289 (4564.83/FTES)		3,664,965 (4564.83/FTES)		3,218,844 (4564.83/FTES)	
8. Other Revenue	None		None		None		None		None		None	

COST – Cost will vary from one department/program to another for many reasons, e.g., department size. Further variation can be caused by (1) the specific step and class standing of the individual faculty members in a department/program, (2) the lack of costs associated with a chair or coordinator (i.e., another department is carrying this charge), and (3) the costs charged to the department/program for fulfilling a college or district function (e.g., miscellaneous reassigned time).

EARNED WSCH/FTEF – These numbers are found in "Reports" or can be taken from the Earned WSCH/FTE in Appendix 11-Grossmont WSCH Analysis Report. They reflect a department/program's revenue per faculty costs. ("Earned" WSCH is actual student enrollment as compared to "Max" WSCH which is determined purely by classroom size.)

COST/FTES – These figures are taken from Appendix 14, Fiscal Year FTES Analysis by Program/TOPS report. They will most often inversely reflect the WSCH PER FTEF ratio (i.e., a department/program with a low COST PER FTES will have a high WSCH PER FTEF). If this is not the case, then the figures indicate that an above average percentage of the direct COST of the department/program is attributed to non-faculty costs.

TOTAL REVENUE – General fund money that the department/program earns from the state for each Full -Time Equivalent Student (FTES). For example, in spring 2010, the state paid $4564.83 for Credit FTES and $2744.96 for non-credit FTES. Other revenue is non-general fund money such as fees, grants, donations, non-resident student tuition.

Sources: http://www.gcccd.edu/research-planning/documents/research-tools/program-review-data/enrollment/Fall/Grossmont/GC_Biology_2006_to_2010.pdf
http://www.gcccd.edu/research-planning/documents/research-tools/program-review-data/enrollment/Spring/Grossmont/GC_Biology_2007_to_2011.pdf
http://www.gcccd.edu/research-planning/documents/research-tools/program-review-data/wsch-ftef-ftes/Spring/Grossmont/Spring_2008_WSCH_GC.pdf

Biology Department
Program Review

Questions and Responses

BIOLOGY

Section	Questions	
1.2 √	Please identify explicitly your most successful and least successful goals? Following that, can you describe in greater detail D1 and F1 with regards to how they relate to achieving section 1.2 goals? Furthermore, the committee needs clarification on where department goals D1 and F1 came from.	The department's most successful goal was two-fold, listed under Program Resources and Development. These goals were to infuse technology (both assistive and analytical) across the Biology Lab curriculum, and secondly, to acquire cadavers on a regular basis, replace or update models and slides. (Appendix 1 has been updated to reflect the second half of this goal) D1 is first based upon faculty integration of assignments and examinations that not only address the science material presented, but also address basic skills in English grammar and writing as well as mathematical skills. **The department enlists tutors for these basic skills in the tutoring center, as well as in the BLC <BLC tutors are not basic skills tutors>.** The availability of these resources is listed in writing in the syllabi, and the use encouraged by individual instructors. Secondly, faculty have continued close communication with the college's programs that address the needs of the under-represented in the fields of Biology and Pre-Health Care, such as EOPS and DSPS. Thirdly, summer programs such as BRIDGES and STEM are specifically designed to attract and encouraged under-represented populations. F1 addresses the needs of under-represented **populations by increasing the difference in learning styles <sentence is confusing, reads like we are increasing the differences>,** as well as providing practical skills (such as computer proficiency) that students will carry into their careers. The department's least successful goal was to maintain and increase the

		number of full-time Biology Faculty to match our FTEF of 14.4: this would include replacing retiring faculty and the addition of 2 new full-time faculty positions. Department Goal #D1: Maintain and Develop partnerships to increase the number of underrepresented groups in Biology and Pre-Health Care Department Goal #F1: Infuse technology (both assistive and analytical) across the Biology Lab curriculum Biology used a collaborative process to develop its departmental 6 year plan goals incorporating existing activities from the department and college's Educational Master & Technology Plans
1.2 √	Do you have any numbers that support the "robust" use of the BLC?	The BLC tutors estimate that the Biology Learning Center is utilized approximately 2,200 times every semester. This total reflects an average of 24 Grossmont students each day (89%), and 3 Cuyamaca students each day (11%).
1.3 √	You need to address the academic program review committee recommendations from your previous review. **Done(Thank you)**	Submitted separately directly to committee
2.1 √	Please review your course outlines and identify which ones are more than five years old. What is your plan for updating these outlines?	All course outlines are in the process of being updated. Revised COR's have been submitted to Instructional Operations for all classes with Lectures and Labs + 2 Lecture only classes: Bio 118, 141). The balance of the Lecture only classes (Bio 112, 114, 132) will be updated in Spr 13.
2.4	We have noticed some teachers have a significantly higher distribution of A's than others. How has the department	Although the Grade Distribution Summary indicates that Sue Caldwell has a higher distribution of A's than Allison

√	investigated these instructor's methods to determine best practices that can be shared with other instructors?	Shearer in Bio 141 (Human Physiology Lecture), it should be noted that the sections taught by Prof. Shearer are exclusively night classes, thus catering to a different student population than those enrolled in daytime classes. In fact, if one compares the grading patterns between Prof. Shearer's classes, and the hybrid-online evening class offered by Prof. Caldwell, the distribution is very similar. Our department does not make a policy of using grade distributions as an indication of a particular faculty member's level of rigor because they are too variable. Close examination of the data shows that although aggregate grade distributions across all sections taught each semester have about 18% A grades, different instructors teaching the same class vary from 3% to 38% in the percentage of A grades awarded (using Bio 120 SP 2011 as an example). Looking at double sections taught by the same instructor (which actually meet together) there may even be a difference of 10% in the proportion of A grades awarded. The same instructor teaching the same class in different semesters may have a wide range in A grades awarded as well (for example, Professor Ripley awarded 50% A's in Bio 215 one semester and 20% the next). In the example cited by the Program Review Committee, Professors Shearer and Caldwell happen to have grade distributions that are quite different, but we would argue that rather than being statistically significant, the difference is within the range we see across all courses, instructors, and semesters, and is not problematic. Further analyses can be provided upon request! (br)
2.6	What campus are you aligning with in regards to BIO 230 and 240?	The department focused on articulating with SDSU & UCSD, the institutions to which the majority of our Bio major students transfer. The Articulation Office keeps the data for articulation with other institutions.

√		
2.9 √	Section 2.9 states "Following is the list...". There appears to be no list - please provide.	The only course that articulates is AP Biology with a grade of 3 or higher, which is equivalent to Biology 120.
3.1 √	Please describe your SLO process. Describe specific successes and challenges you are experiencing in your SLO assessment process.	Biology was one of the first departments on campus to have documented SLO's for all its classes. In fact, CoChairs Milgrim and Dudley received "SLO Top Banana" award for their leadership on SLO implementation. The SLO reporting process has changed since Biology was last required to do extensive SLO reporting (from a simple percent successive report to the current, more extensive report). Only 3 Biology classes have reported SLO results under the new regimen (Bio 105, 144 in Spr 2010). The balance of Biology's classes are in the midst of required "6 year cycle" reporting cycle with the next required report due in Summer 2013 (assuming Summer classes are held). A PDF file of the last SLO report from 2008 is included separately from these responses. SLOs for each class have been determined by individual lead instructors, and are confirmed by the full-time faculty during monthly staff meetings. At the beginning of each semester students in every Biology class are given a student syllabus in which SLOs for that particular course are stated. During selected exams instructors determine questions which address each specific SLO, and after grading the exams ascertain the percentage of students who understood the concepts related to each SLO.
3.2	For the program SLO's that you did test, how did your student's fare?	As mentioned in 3.1, for the two courses that have been evaluated using the new assessment template, the average success rate was over 50%. Informal evaluation has been rendered since the

√		last cycle in several classes, and has demonstrated similar results. Anecdotally, each time that SLOs are evaluated in Bio 152, nearly 100% of students demonstrate a working understanding of SLO #1. In the first half of the semester, the understanding of SLO#2 (Gram stain) is usually below what one would consider "satisfactory", however toward the end of the semester, success for this SLO rises to approximately 90%.
3.3 √	Followup after completing 3.2	In microbiology, Since SLO #3 involves two goals, when it is formally assessed, Professor Perchez will separate the 2 skills independently. (mp)
4.5	Which classes seem to have the most problems with students not reading the textbook? Is this a larger problem in the entry-level courses or in all courses? Is it a problem with some textbooks more than others? Suggest you conduct further surveys of students to discover why students do not use the textbook as a resource. (Arturo Millan/Ray Funk did something similar to this in the Math Department if you would like some direction).	The Department conducted a survey during the week of December 3rd in which students were asked to respond to a number of questions related to textbook use and possible reasons that textbooks were not used more frequently. 2/3 of the 100 respondents were female and 1/3 male—the same percentage as was received by the student survey put out earlier this year by the school. 80% of respondents spoke English in their childhood home, and 40% reported that their parents read to them every day during their elementary school years. In addition, 47% responded that the highest level of education completed by a parent was a bachelor's degree or higher, with an additional 25% reporting that a parent had some college education. 80% of students reported that they read at least once a week for fun. 47% of respondents were currently enrolled in entry level classes (Bio 120 or lower), 5% of respondents were currently enrolled in Biology majors courses (Bio 230 and 240), and the remainder were enrolled in pre-healthcare courses (Bio 140-152). When questioned as to how much time

		was spent per week studying with the textbook, the responses were: 0-2 hours: 44%, 2-3 hours: 22%, 3-5 hours: 15%, 5-8 hours: 12%, and more than 8 hours: 7%. Of those who spent only 0-2 hours per week in the textbook, 2/3 were students in entry level classes. No students from Bio 140 (Human Anatomy) reported using the textbook less than 2 hours per week. Professor Shearer assigns homework based upon textbook readings. On the other hand, Professor Caldwell assigns weekly homework assignments based upon the primary literature as well as lectures, so a few (5%) respondents indicated that they used the textbook less than 2 hours per week. When questioned what would encourage students to spend more time studying with the textbook each week, 48% indicated that if assignments based upon the reading were required they would spend more time. 21% indicated that assigned chapter-end questions would increase time in the textbook, 14% indicated that the textbook was too difficult or not detailed enough. Write-in responses included the reasons that they didn't use the book including the expense of the book, and the thought that textbooks are boring or obsolete. 6% responded that lectures and/or outlines provided by instructors were adequate for the understanding and assessment of the material.
4.8 √	Is there anything that prevents you from using the two sets of computers (4.8c) to address the enrollment issue you describe in 4.7 (e.g. that there are only 15 laptops).	There are 3 reasons why we cannot increase the number of students in Bio 215 1. One set of laptops runs Windows 7 and the other is a mix of Win 7 and Win XP. This makes using both sets nearly impossible as the computer the instructor uses (and does demos with) Win 7 2. At this point, we have 2 classes (142 & 215) that make heavy use of laptops and require Win 7. While 142

		does group work, Bio 215 students must work solo. If we were to increase the maximum for Bio 215 (greater than the current 15), this class would monopolize both laptop sets creating scheduling conflicts not only with Bio 142 but also classes (Bio 110 & 120) that use the laptops less but due to the high number of sections have more rigid schedules. 3. Pedagogically speaking, Bio 215 requires much more individual attention, higher class sizes would decrease the amount of individual attention and likely impact student success as a result. (SF)
5.1	Can you provide a discussion of how the activities described in 4.8 resulted in student success? Did they work? How do you know? Is there data? We suspect the Bridges and STEM programs have data that show their success with special populations.	The activities described in 4.8 were extremely successful in providing opportunities to explore careers in the Biological Sciences, and attend non-graded summer programs for enrichment in Biology. Data indicate that during this program review period of time, the percentage of underrepresented groups that transferred to four-year universities as biomedical or behavioral science majors reached a high point of 26.5% in Fall 2008. That number declined in the next two years, presumably due to cuts in educational spending. In addition, improvements in the environmental nature center and native garden have now provided access to disabled students.
5.4 √	Since you've noted several times in your document about the success of your African-American students, what strategies have you investigated that will address this issue?	*Research indicates that although many factors come into play in addressing the educational needs of African-American students, the role that this or any department can play is peer-peer tutoring/mentoring. In addition to summer programs that provide this relationship, the department in the future may develop a more systematic approach by working with Umoja program advistors/sponsors. (mp)

		*http://www.insidehighered.com/news/2012/02/06/study-aims-learn-why-some-black-men-succeed-college#.TzGtqxWgRi8.email
6.5 √	What we take from your answer that you don't work too much with student support services. Why?	As a department, we work closely with Student Services as needed. Areas of recent cooperation include: establishing pre-requisite clearance procedures; working with DSPS on accommodations in lab classes; collaborating with Counseling Liaison (Renee Tuller) regarding advising prospective and current Biology and related majors (i.e., Medicine) Regarding general information each instructor presents the many resources available to students at Grossmont College to each class. This information is offered verbally, and well as in the syllabi. Many students make use of office hours to discuss not only academic issues, but personal and career issues as well. It is in this venue that students are directed and encouraged to make use of programs such as DSPS, EOPs, Dream Keepers, health services and counseling. The student survey (Appendix 7) indicates that 61% of students have used one or more of these resources to assist them with a course, life situation, or career plan.
6.6 √	How do students respond to the technology that you use in your classes?	Students have responded favorably to technology used in the classes. Students are given a significant number of resources and technologies that allow them to assimilate knowledge and critical thinking skills, based upon their individual learning styles. The student survey (Appendix 7) shows that students go more frequently to Blackboard as a source of course information and communication (39.8%) than to e-mail (30.5%) or to the instructor (29.7%). The survey also indicates that 79.4% of students have

		used the tech mall, either voluntarily or as required by an instructor. 69.3% of those have found the tech mall to be "very helpful" or "helpful." 78% have utilized the library's online resources.
8.1 √	Please describe a few examples about how some of these activities have resulted in improvement. We want to shine a positive light on the outstanding work that you and your department do, but need some details.	The most applicable response is that faculty members have continued to remain current and energized in their field, which they pass on to students. Secondly, faculty members make use of technology such as Blackboard 9. Many students in Bio 142 (Human Physiology Lab) report that the library media presentation given by Roxane BenVau at the beginning of the semester is their first exposure at Grossmont College as to how to adequately access materials from the library's databases.
8.2 √	Same question. Please provide some details about these innovations ☺	Biology 120 students learn genetics from the "Darwinian Snails" computer simulation now used in lab. Bio 142 lab has acquired real-time data sampling software (BioPac) in which students learn clinical skills as they collect data on each other in terms of muscle, cardiovascular and respiratory function.
9.2 √	Full-time ratio is calculated by LED, not by head count. Your full-time ratio is 51%. You may comment if you wish but not mandatory.	(Data changed)
9.4 √	What role do part time and classified staff play in department decision-making? Are part-time faculty satisfied with their role in the department? Are your classified staff satisfied with their role departmental decision making? You could use your faculty survey results to address this.	Biology's Technical staff are on par with teaching staff. They are involved in all dept level decision making. Part-time faculty are invited to all Dept meetings and activities but rarely if ever attend or display any interest in dept decision-making activities

Program Review Committee
Summary Evaluation

GROSSMONT COLLEGE
Spring, 2013

BIOLOGY
PROGRAM REVIEW COMMITTEE
SUMMARY EVALUATION

The Program Review Committee commends the Biology department for:

1. Serving on several campus committees that shape the direction of the college (8.3)
2. Participating in the One Book, One Campus projects, thereby promoting the Biological Science disciplines (2.7).
3. Participating in the design of the new biology facilities, specifically, the greenhouse and lath-house facilities, the native garden, and the wildlife sanctuary. These new venues improve access, instruction and opportunities for learning (1.3, 4.1).
4. Communicating the department offerings via flyers & outreach activities to improve student navigation of the program (4.6).
5. Improving student success across genders and ethnicities due to the implementation of the Biology Learning Center (BLC), (5.2, 5.4).
6. Contributing to the local community through a variety of programs, such as Bridges to the Future, Life Sciences Summer Institute, California Virtual Academy, just to name a few. (4.8, 5.7, 7.1).

The Committee recommends the following:

1. Reexamine the fulltime / part time ratio in order to determine the need for full-time faculty member(s) when the budget improves.
2. Continue to work within the college planning process to stabilize funding for regular supply, maintenance and equipment expenses.
3. Maintain current community programs and create a plan where possible for continuing these or similar programs when these grants expire (Bridges, Health and Science Pipeline Initiative, Life Sciences Summer Institute).
4. Maintain tutoring facilities (BLC, Microbiology Open Lab).
5. In order to support the expansion of tutoring facilities, use the Math Study Center model to explore ways to quantitatively measure the influence of the BLC on student success.
6. Consider developing a method for students to report on their post-Grossmont College progress.
7. Using the Course History Information Report, continue to submit curriculum modification proposals for those courses that have not been reviewed by the Curriculum Committee in more than four years or curriculum deletion forms for those courses that have not been offered in the last three years.
8. Use student-learning outcome data for continued course and program improvement.

Biology

SCHOOL YEAR	FALL SEMESTER		SPRING SEMESTER		COST/FTES	COMMITTEE RECOMMENDATION
	WSCH/FTEF	% of MAX WSCH	WSCH/FTEF	% of MAX WSCH		
2005/2006	723.12	101.13	704.65	99.26	1607.67	MAINTAIN
2006/2007	678.33	95.27	671.60	97.18	1666.89	
2007/2008	695.18	99.49	699.29	98.67	1734.66	
2008/2009	685.39	99.95	696.4	101.87	1729.36	
2009/2010	752.77	109.32	730.82	108.84	1591.27	
2010/2011	723.35	104.61	703.57	101.16	1781.77	

College President _____ Department Chair _____ Academic Program Review Chair _____