



Annual Program Review 2012-2013 - INSTRUCTIONAL REPORT

Division - Program

BIOLOGY

Authorization

After the document is complete, it must be reviewed and submitted to the Program Review Committee by the Division Chair.

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Date Received by Program Review: 11/19/2012

1.0. Trend Analysis

For each program within the division, use the data provided to indicate trends (e.g., steady, increasing, decreasing, etc.) for each of the following measures.

Program	Academic Year	FTES Trend	FTEF Trend	WSCH / FTEF Trend	Full-Time % Trend	Fill Rate Trend	Success Rate Trend	Awards Trend
Biology	2008-2009	605	28	681	69.2%	115.9%	62.1%	2
	2009-2010	610	27	710	72.9%	118.7%	62.2%	3
	2010-2011	596	31	607	71.8%	110.2%	66.7%	2
	2011-2012	595	30	628	69.5%	112.1%	65.1%	4
	% Change	-1.7%	+6.6%	-7.8%	+0.3%	-3.8%	+3.0%	+100.0%
	Four-Year Trend	stable	stable	stable	stable	stable	stable	increasing

1.1 Describe how these trends have affected student achievement and student learning:

Student demand for Biology classes has remained high. A large number of students are unable to register for the biology classes they need. In order to meet the demand we will need to increase the number of course offerings in the future.

1.2 Please explain any other relevant quantitative/qualitative information that affects the evaluation of your program?

Many of our students are not well prepared for college level work. This results in some of our classes having fairly high withdrawal and low passing rates. One of our classes, Biol 125 (Marine Biology Lecture) is taught at the GCC main campus and as part of the Baja California Field Studies Program. We have compared student achievement (percentage of students earning each letter grade) between the two groups and found that students who take Biol 125 as part of the Baja Program have statistically significant better outcomes.

2.0. Student Learning and Curriculum

Course Level

Year	SLOAC Course Count	% of Courses with SLOs Defined	% of Courses Assessed
2010-2011	13	100.0%	84.6%
2011-2012	12	100.0%	100.0%
% Change		+0.0%	+15.4%
Four-Year Trend		stable	increasing

Provide the following information on each department and program within the division.

List each program within the division	Active Courses with Identified SLOs		Active Courses Assessed		Course Sections Assessed	
	N / N	%	N / N	%	N / N	%
Biology	3 / 3	100	3 / 3	100	6 / 6	100
Health Science Biology	4 / 4	100	4 / 4	100	10 / 11	91

2.1 Please comment on the percentages above.

All courses have been assessed and we plan to assess all sections of all classes in the future.

2.2 Using the results from your division/departments recent assessment reports, please summarize any pedagogical or curricular changes that have been made as a result of your course assessments.

We have used the GAUSS grant funds to: 1) purchase more anatomical models and train student tutors to increase student success in the health science Biol 115 and 120 courses; 2) improve our zoological and botanical collections, which are used by students in Biol 102, 122, and 126; 3) maintain our vivaria with animals that are used in Biol 102, 122, and 126.

We have held meetings with the Chemistry faculty in order to adjust our class schedules to minimize time conflicts between the biology and chemistry courses needed by biology majors. Another result of these meetings was an agreement to spend more class time emphasizing quantitative skills and preparation of graphs in the chemistry classes that are pre-requisites for our Biol 101 and 102 courses.

We have also organized informational meetings for biology majors. Participation in these meetings included faculty in biology, chemistry, and counseling.

Faculty in Biol 102 are attempting to improve the Information Competency of students by including library faculty in the teaching of research skills and the assessment of a library research project.

- 2.3** Please list all courses which have been reviewed in the last academic year.
Note: Curriculum Review is required by the Chancellors Office every 6 years.

None

Degree, Certificate, Program Level

List each degree and certificate, or other program* within the division	AA/AS Degree PLO Identified		AA/AS Degree Assessment Cycles Completed		Certificate PLO Identified		Certificate Assessment Cycles Completed	
	YES	NO	YES	NO	YES	NO	YES	NO
Biological Science	100	0	67	33	NA	NA	NA	NA
Health Science Biology Program	100	0	67	33	NA	NA	NA	NA

- 2.4** Please comment on the percentages above.

Two of three PLOs have been assessed for the Biological Science degree: Transfer Rates and Lab Skills. The data needed for the third PLO assessment, Student Success After Transfer, has been unavailable to date. We hope to get access to that data before the next Program Review.

Two of three PLOs have been assessed for the Health Science Biology Program and the remaining PLO is currently being assessed.

- 2.5** Using the results from your division/departments recent assessment reports, please summarize any changes that have been made as a result of your program level assessments. Your summary should include a summation of the results of all degrees, certificates, and other programs which were recently assessed.

Class schedules have been coordinated between biology and chemistry so that more students will be able to take the biology and chemistry courses needed by biology transfer students.

The study room used by Health Science students has had its hours of operation expanded and tutors are available to help students learn.

- 2.6** Please list all degree/certificate programs within the division that were reviewed in the last academic year.

None

2.7 What recent activities, dialogues, discussions, etc. have occurred to promote student learning or improved program/division processes in the last year?

Mark an "X" in front of all that apply.

X	Curricular development/revisions of courses
	Curricular development/revision of programs
X	Increased improved SLO/PLOs in a number of courses and programs
X	Other dialog focused on improvements in student learning
X	Documented improvements in student learning
X	Increased/improved SLO/PLOs in a number of courses and programs
	New degree or certificate development
	Best Practices Workshops
X	Conference Attendance geared towards maintaining or improving student success
	Division Retreat in 2011-2012
X	Division or department attendance at Staff Development activity geared towards maintaining or improving student learning
X	Division Meeting Minutes
	Reorganization

Please comment on the activities, dialogues, and discussions above

The SLOs for Biol 122 were revised.

Labs were revised in Biol 112 and Biol 122.

Biology and Chemistry faculty had meetings to discuss ways to increase student success.

Biol 125 assessments showed better student achievement in courses that are part of the Baja Field Studies Program, when compared to students taking the course at GCC.

One faculty member attended a Mastering Program Conference organized by Pearson Publishing at Pasadena City College.

Two of our faculty members participated in Math Across the Curriculum meetings.

3.0 Reflection and Action Plans

- 3.1** Based on your data and analysis presented above, as well as on issues or items that you were unable to discuss above, comment on the Strengths and Weaknesses of the Program

Strengths

List the current strengths of your program

1. Biology courses have high fill rates and serve many students.
2. Students who complete our programs have high transfer rates.
3. Superior academic preparation for transfer to Biological Sciences programs at UC, USC, CSU, and Health Professional Programs.

3.2 Weaknesses

List the current weaknesses of your program

1. We have expanded our course offerings without increasing lab technical support.
2. There is a need for our students to learn current library research techniques.
3. Aging equipment used in some of our labs prevents us from preparing our students for the use of current technology.

- 3.3** Using the weaknesses, trends and assessment outcomes as a basis for your comments, please briefly describe any future plans and/or modifications for program/division improvements. Any plans for reorganization should also be included, along with a resource request if applicable.

Plans or Modifications	Anticipated Changes/ Improvements	Link to EMP, Plans, SLOs, PLOs, ILOs
Continue organizing informational meeting for Biology Majors	Increased student awareness of transfer opportunities and requirements	PLO: increase transfer success
Implement Student Tutoring with GAUSS grant funding	Improved Student Success in Biol 115 and Biol 120	PLO: increase transfer success
Continue Student Training with GAUSS grant funding	Provide an opportunity for students to train in the management of biological collections and the maintenance of vivaria as preparation for transfer or careers in organismal biology	PLO: increase transfer success
Seek increased lab technical support	Better serve our current students and increase our course offerings in the future	NA
Work with library staff to teach research methods	Improved Student Information Competency	ILO: information competency

Format Rev. 9.21.12

2012 PROGRAM REVIEW

Section 4 Resource Request

BIOLOGY	I: BIO-1
Chairs and New computer	

Mark Type of Request:

	Facilities/Maintenance		Computer Hardware for Student Use
	Classroom Upgrade	X	Computer hardware or Faculty Use
	Instructional equipment		Software/Licenses/Maintenance/Agreements
X	Non-Instructional Equipment		Conference/Travel
	Supplies		Other

4.1 Clearly describe the resource request.

About **50** of the stools in our labs are broken or in poor shape.
Amount requested for chairs: **\$12,500 (50 X \$250 per stool)**

4.2 Funding

X	Requires One Time Funding
	Requires Ongoing Funding
	Repeat Request
	Year(s) Requested

4.3 Please check if any off the following special criteria apply to this request:

X	Health & Safety Issue
	Accreditation Requirement
	Contractual Requirement
	Legal Mandate

Please explain how/why this request meets any of the above criteria.

Our students use the chairs in the Biology Division’s laboratories (SG building) for long periods of time (3.5 continuous hours) during lab activities that require a comfortable and safe environment. Some of the chairs are not safe to use because they are broken or missing parts. Some of the lab stools can no longer have their height adjusted. Being able to adjust the stool height is very important, particularly when using the microscopes or performing detailed dissections.

4.4 Justification and Rationale: What EMP Goal, plan, SLO, PLO, or ILO does this request address? Please use information from your report to support your request.

This request addresses the PLO on lab skills. Students lab skills are enhanced by functioning equipment such as lab stools.

4.5 What measurable outcome will result from filling this resource request?

Replacing the lab stools will provide a safer and more comfortable environment for the students to learn.

APPROVAL

AGENCY	DECISION	
The Program Review Committee has reviewed the information in this request and finds it to be:	COMPLIANT	X
	NON COMPLIANT OR INCOMPLETE	
	a) Request not adequately described or incomplete	
	b) Request not linked to assessments or assessments not completed	
	c) Request not linked to EMP, plan or SLO,PLO or ILO	
	d) Report Incomplete	
PRC Comments		

Form Revised 9.19.12

Reports determined to be "Non-Compliant" will be returned to the division member responsible. Reports must be resubmitted with needed changes to the Program Review Office. Requests will not move forward in the budget process if the report or request is Non-Compliant.

2011 PROGRAM REVIEW**BIOLOGY*****FT Senior Laboratory Technician*****I: BIO-2****Section 4: CHAC REQUEST**

If this is a repeat request, please list the year(s) requested: 2006 to 2011

4.1. Describe the position including the complete description used to advertise for the position. Also include the division/department/program or service and full-time percentage for the position.

The Biology Division is requesting a Full time Evening Senior Laboratory Technician. This is not a request for a new position but rather we are requesting that the 25 hours per week, 10 month Senior lab technician position be upgraded to a 40 hours per week, 11 month position.

4.2 Criteria:

- a) Are there state or federal mandates particular to this program/service?
If so, please describe.

No

- b) How does this position support the objectives and functions of the college in regards to the Mission Statement, EMP goals, annual college goals and/or student need.

This evening senior lab technician position is essential to meet the needs of both students and adjunct faculty in the Biology labs. The laboratory experience of our students is directly enhanced by good preparation and access to materials provided by this technician, and helps fulfill the mission statement goal of providing a rich and rigorous curriculum that helps students understand and appreciate the scientific environment in which they live.

- c) Please provide quantitative data to support your request (such as program review, research office reports, surveys, etc.)

When the Biology Senior Lab Technician was hired as a 25 hours per week, 10 month employee in 1999, she was responsible for the preparation of lab materials for 7 labs with 30 hours of lab time. Today, she is responsible for the preparations of lab materials for 10 labs with 45 hours of lab time, which is a 50% increase. The microbiology class especially requires many hours of preparation. Every week the lab technician must prepare bacterial cultures and multiple test tubes and petri plates with many different types of media for 56 students. Since the institution of block scheduling, the Biology labs end much later at 4:50 pm. The evening lab technician is also responsible for helping the instructors "break-down" 11 lab set ups per week. This involves the removal of all lab equipment and materials used by the students during the day lab in preparation for the evening classes, which in some cases begin as early as 5:30 pm. The summer Human Anatomy course is only 6 weeks long and the students are in class from 9am to 4:25pm. The students must learn 2.5 times the material in one week than they would in the normal semester. Since the evening lab tech is only a 10 month employee, the study room closes at 4:00 pm when the day lab technician leaves. These students have no time to review material outside of class.

In summer 2011, for the first two weeks of the summer session the students were able to review lab materials after class from 4:25pm to 9:00pm since the evening lab tech was still working. For the last 4 weeks of the summer session, the students did not have access to lab materials outside of class. Students in the summer class requested that the evening lab technician work from 4 to 9 the day before the remaining 3 exams. Dr. Mary Mirch approved the 15 additional hours. Data collected from students signing a log every time they check out study materials shows that 24 out of the 29 students who completed the class utilized the materials provided in the study room. Of the 24 students who utilized these resources, 18 earned a "C" or better grade in the course, a 75% success rate. When we include the students who withdrew from the class, the success rate is 57%. Those students who use the study room are succeeding at a higher rate than those students who do not. See the attached email from the students to Dr. Mary Mirch. This is part of the reason that the number of months for the evening lab technician should be increased from 10 to 11 months to allow the summer students a greater chance to succeed in the intensive fast-paced summer anatomy class.

- d) Is this request related to compliance with a collective bargaining agreement?
If so, please explain.

No

- e) Are there industry standards that directly relate to this position? If so, please explain.

Yes, the mathematics division has an evening/weekend Senior Instructional Computer Lab Technician, who is a 40 hours per week, 11 month employee. The Chemistry Department has an evening laboratory technician who was hired 4 years ago as a full-time, 40 hours per week, 12 month position (previously a part-time position). This technician is responsible for between 6 (Fall 2011) and 9 Chemistry labs (Spring 2011), depending on the semester. The Biology evening laboratory technician works 25 hours per week for 10 months and is responsible for 8 (Fall 2011) to 10 (Spring 2011) labs. She will often stay longer than the time for which she is paid, to help the students and the evening instructors.

4.3 Additional Information

- a) What implications does the addition of this position have on: budget, staffing, facilities and equipment?

The increase of 15 hours per week (from 25 to 40) and 1 additional month per year (from 10 to 11) for the Senior lab technician would be at a cost of approximately \$24,000 and an increase in the health benefit costs from single to family.

These additional hours will provide the badly needed support to the adjunct instructors who currently must stay past their class time to properly put away the lab materials. These adjunct instructors are not compensated for the extra time they spend doing work that should be covered by a Lab Technician.

- b) Discuss any benefits your program may have lost from not receiving this requested position.

The lack of technical support is a burden for the evening adjunct faculty. There is no technical support for 1.5 - 2 hours each night, since the Biology classes end at 10:05 or 10:25pm. This is a particular hardship for new instructors who may not know where to find necessary materials or how to solve particular problems.

c) Are there any special concerns that are not addressed in this request? If so, please explain.

It is a major concern to this Division that we have been requesting the increase in hours and months for this lab technician for 6 years with no success. There is a great demand for Biology classes but we will not be able to meet that demand if we do not have added technical support. The Biology lab technician is the only science lab technician that is a 10 month employee and not full-time.

d) Describe how this position enhances student success and/or program outcomes.

The data in 4.2c demonstrates the burden that has been placed on the lab technician to prepare material for 50% more lab hours without additional compensation. The success of the students in the evening classes depends on the laboratory technician having adequate time to prepare the materials needed by the students to perform the

4.4 Please attach data from Human Resources on new classified hires in your program during the past five years, including the full-time percentage of each new hire.

The Biology Division has not hired a new full-time classified employee in 13 years, and no Biology classified employee is a 40 hours per week, 12 month employee.

ATTACHMENT

From: VIVIAN ANDERSON [mailto:vanders485@student.glendale.edu] **Sent:** Thursday, July 28, 2011 1:10 PM **To:** Mary Mirch **Cc:** quepasasarita@yahoo.com; asatoorian@hotmail.com; gcovitt@glendale.edu; Imizuno@glendal.edu **Subject:** Study Lab hours for Anatomy Students

Dr. Mirch,

Our summer Anatomy class (Biology 120) just finished taking its final exam. On behalf of our class, I wanted to take a moment to thank you for approving extra hours for Naira, the Biology Lab technician, so that she could keep the Tom Rike Study Center open late the night before each of our exams. We really appreciated, and utilized the extra time to look at models and study, and honestly believe it helped us get the edge we needed for our exams. We all knew that we were taking a very challenging class in a very short time, but Dr. Mizuna, Dr. Covitt, Naira and Mariam really went above and beyond to make sure that we had every available resource for success. By approving those hours, you were also part of our success. Thank you again for your help, and understanding! Enjoy the rest of your summer!

Sincerely,

Vivian Anderson, and the entire Biology 120 class.

2012 PROGRAM REVIEW**BIOLOGY*****FT BIOLOGY INSTRUCTOR*****I: BIO-3****Section 4
IHAC Request**If this is a repeat request, please list the Resource ID code or year requested: 2011 **4.1** The Office of Instruction will provide data on instructional hires during the past five years, including zzzz the full-time percentage of each new hire.

a) Number of full-time faculty currently assigned to the Program		8
b) Number of full-time faculty assigned to the Program in 2005		7
c) Does this position cover classes currently taught by adjuncts? Yes or No		Yes
c) Does this position contribute to program expansion? Yes or No		Yes

4.2 CPF Index (Committees Per Full-time Faculty)

1. Total number of full-time faculty members in this department/program.	8
2. Total number of committees in which all FT faculty members in this area participate (Governance and other campus related committees & participation).	20
3. CPF INDEX (Total of # 2 divided by #1)	2.5

4.3 Status of Released Time Faculty

Faculty Name	Release Time Position	% RT	Term of Assignment
Keith Conover	Biology Division Chair	40%	5 years

4.4 How does this assignment relate to the college's Mission Statement?

The new instructor would teach Human Biology and Human Anatomy courses. These courses provide a rigorous curriculum to prepare students for a career in the Health Sciences, including Nursing, Physical Therapy, Physician Assistant, and Pharmacy.

4.5 How does this position relate to the objectives and functions of the college?

- | | |
|--|------------------------------|
| a) Associate Degree | d) Basic Skills development |
| b) Transfer to a four-year institution | e) Noncredit Adult Education |
| c) Career and Technical Education | f) Personal enrichment |

This new instructor would teach Human Biology and Human Anatomy courses which are requirements for the AA Health Science Degree and also are required for acceptance to the Associate degree Nursing program or for transfer to a four-year university Bachelor of Science or Master of Science degree in Nursing.

- 4.6** Describe how this position enhances student success. Ex: enhances instructional skills, meets community or industry needs. Contributes to state of the art technical education, etc. What measureable outcome will result from filling this request?

This new instructor would teach the Biology 115 Human Biology course which is highly recommended for students who do not have a previous science background. SLO assessment for Biology 120 in 2009-2010 demonstrated that the successful pass rate for Biology 120 was 85.5% for the students who took Biology 115 first compared to 58.1% for those students who did not take the Biology 115 class. Biology 120 is a required course for those students applying to various Health Professional programs (Nursing, Physical Therapy, Physician Assistant, and Pharmacy). These courses provide the students with important laboratory skills and a solid foundation to be successful in these programs.

- 4.7** Are there anticipated negative impacts for not hiring this position? If so describe.

The Human Biology and Human Anatomy courses are in high demand and always close within the first three days of registration. In addition, the waiting list of 25 students also closes within the first week of registration and 25 or more students who are not on the waiting list attend class the first day of instruction, hoping to enroll in the class without success. This delays students from applying to the Associate degree in Nursing programs in a timely manner because the Anatomy course is a prerequisite for the Physiology course and both of these classes must be completed before a student may apply to the nursing programs. The same is

- 4.8** Are there any other special concerns not previously identified? If so, please explain.

The demand for these classes will be even greater in the coming years because the Anatomy class is a requirement for the new Kinesiology degree approved by the Physical Education division. In addition a new degree/certificate in Health Information Technology in the Business division also will require the Anatomy or Human Biology courses, making them even more impacted than they currently are. The addition of a new Biology instructor to teach the Human Biology and Human Anatomy courses would greatly help the Biology Division meet the needs of these additional students.