



Natural Science: Biology **Instruction**

Vision/Narrative

The Biological Science program at Gavilan offers a variety of courses for both science and non-science majors. We offer degrees in Biological Science, Health Science, and a Biotechnology Certificate of Achievement. Through Measure E and STEM grants (I and II) the renovation facilities and newly purchased equipment has helped modernize our program.

The Biology program has many strengths. Our greatest strengths lie within the improved interaction between our students and faculty. The addition of our Biology Study Center (LS room 109) and the open work area in LS 105 for students and faculty have helped improve our program tremendously, in part by increasing student contact hours. The increased use of the online managing system (iLearn) and the recent implementation of the faculty-managed Supplemental Instruction (SI) program funded by STEM has also helped strengthen our program. Recent efforts on creating concept based workshops (AEW) in biology that aide in building analytical skills and a deeper understanding will also strengthen the discipline. Both SI and AEW has helped bridge the communication gap between student and instructor. These efforts will continue to encouraged faculty to collaborate with other faculty to help build a more cohesive program. This increased cohesiveness is a vital component of our program and is supported by Supplemental Instruction, AEW as well as MESA, TRIO, the Tutoring Center, Natural Science internships/stipends and student organizations like Science Alliance, Rho Alpha Mu, SACNAS club and the newly formed Health and Careers Club.

The program continues to update and develop curriculum, such as the inclusion of animal survey of pond habitat (Bio 4), survey of invasive plant species (Bio 5), DNA isolation and cloning in the Biotechnology Lab skills and Techniques class (Biot 103), DNA fingerprinting in Cell Molecular Biology (Bio 1), the effects of one's environment on Human Biology (Bio 12), and practical field exercises in Marine Biology (Bio 13) and Environmental Science (ENVS 1). Additionally, the continual development and management of the arboretum, native garden (grass meadow) and the outdoor classrooms will allow us to build stronger collaboration efforts with the community, industry and universities. These efforts enhance community involvement through service learning projects which will become a major component of our Biology curriculum.

The primary weakness within our program is due to under-staffing. There is urgency to hire a third full-time Biology instructor so that the program can adequately meet the needs of the campus and community. There is also a need to staff TWO full-time Lab Technician positions so that we can adequately meet program growth in Biology and Chemistry. Finally, the limited lecture/lab space available on campus and/or offsite campuses hinders us from developing and growing our program further to meet the needs of the community.

To conclude, the Biology program's high productivity (WSCH/FTES), high adjunct to full-time faculty ratio (5:1), the number of unique courses in our discipline, increased community needs, and prospective potential growth all provide persuasive evidence to hire a third full-time Biology instructor and create two full-time Lab Tech positions.

Feedback from Supervisor / Dean

Student need in Biological Sciences continues to grow, and every avenue to meet the need should be explored.



It's encouraging to see your use of data as it pertains to student success and the overall focus on students in general.

The list of proposed activities is impressive. How will you evaluate progress on your activities towards achieving your goals?



Program Objective 1: Increase ability of the Biology program to meet growing institutional obligations and enable us to better support the needs of our students and the community.

Strategy and Goal(s):

Not Applicable: RESUBMITTED: Copied from Academic Year 2015-16

IEC Program Review:

Yes, this Objective is based from the last IEC Program Review.

Progress:

No- None -

Activity 1: Submitting request for full-time faculty position to the FT Hiring Priorities Committee

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 2: Working with the Institutional Researcher: data collection on FTES/WSCH

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 3: Raising awareness and encouraging Administration to hire a third full-time Biology faculty

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 4: Hire third full-time Biology instructor

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 5: Hire two full-time Lab Technicians for Biology and Chemistry

Personnel Request - *none*

Non-Personnel Request - *none*

Rankings:

Ranker	Comments	Rank
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Dean	The need for program expansion is dictated by student need.	12
Vice-President		
Budget Committee		
President's Council		



Program Objective 2: Expand the Natural Science program

Strategy and Goal(s):

Not Applicable: RESUBMITTED: Copied from Academic Year 2015-16

IEC Program Review:

Yes, this Objective is based from the last IEC Program Review.

Progress:

Yes: Science faculty have discussed the possibility of creating a science student academic/professional support group. The faculty from each subdiscipline will act as coadvisors.

Activity 1: Track current and past biology transfer students. Maintain a current record of student contact information and develop a student forum to be offered to the public.

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 2: Track self identified biology majors from introductory level courses, to transfer level courses, to graduation and/or transfer. Maintain success rates, retention rates and graduation/transfer rates for biology (biology, health science, biotech) and compare them to past records. Identify courses that students have difficulty.

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 3: Support Liaisons with 4 yr campuses to support and develop new curriculum and activities.

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 4: Support the maintenance of science clubs/interns/students that provide service learning that help beautify the campus, educate and enrich the lives of the community.

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 5: Work with other disciplines (Chemistry/Physics/Math) to increase transfer/graduation success rates

Personnel Request - *none*



Non-Personnel Request - *none*

Activity 6: Support campus activities that promote Science such as the Health Fair, and Science Alive.

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 7: Hire 3rd Full-time Biology Faculty

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 8: Continued support of the Biology Study center

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 9: Maintain the Supplemental Instruction efforts and develop a biology focused Academic Excellence Workshop program.

Personnel Request - *none*

Non-Personnel Request - *none*

Rankings:

Ranker	Comments	Rank
Dean	The need for program expansion is dictated by student need.	12
Vice-President		
Budget Committee		
President's Council		



Program Objective 3: Strengthen our Biotech Certificate program

Strategy and Goal(s):

Not Applicable: RESUBMITTED: Copied from Academic Year 2015-16

IEC Program Review:

Yes, this Objective is based from the last IEC Program Review.

Progress:

Yes: Gavilan, San Jose State University, Gilroy High School, Teknova, Syngenta, and Genentech met in Spring 2013 and have helped update course outline and learning objectives for the Biotech lab skills curriculum. This update included the addition of practical techniques that allow students to advance their technical skills beyond the college-level majors biology class (Bio 1- Molecular Cell Biology) and has made student more marketable for employment in the academic field and industry.

Activity 1: Create Biotech Advisory committee which will include members of the community

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 2: Co-Host Biotech Advisory meeting

Personnel Request - *none*

Non-Personnel Request - *none*

Rankings:

Ranker	Comments	Rank
Dean	Exploration should continue in this area.	8
Vice-President		
Budget Committee		
President's Council		



Program Objective 4: Research, continual development and maintenance of the Gavilan Arboretum, Native Garden and Grass Meadow

Strategy and Goal(s):

Not Applicable: RESUBMITTED: Copied from Academic Year 2015-16

IEC Program Review:

Yes, this Objective is based from the last IEC Program Review.

Progress:

Yes: History is as follows: We have had the project approved by Facilities and Grounds committee and the Board of Trustees (Fall 2010). We have also secured funding sources from STEM II. We have visited various arboretums to develop and are closer to finalizing a concept plan. These new plans have been approved by the Facilities and Grounds committee, the Board of Trustees in Fall 2012 and was approved by CEQA.

We have identified approximately one-hundred plants here on the main campus and we will continue to identify more in the future. Labeling of these one hundred plants began in Spring 2013 and will continue through the 13/14 AY. Continuing maintenance will involve a Biology faculty and the HSG committee.

Arboretum boundaries on the main campus were identified along with a propagation/living classroom area literally just feet from the life science building will serve as a native garden and grass meadow demonstration site for our students and community. We will continue to meet with consultants to identify existing plants and strategize for new avenues of interest.

In Fall of 2015 the Natural Science department (Biology program) met with HSG committee and agreed that they will work with the Landscape architect (B. Tanaka) to design the grass meadow located in the surrounding vicinity of the duck pond and outdoor classroom.

Activity 1: Work with faculty and consultants to identify existing significant plants on campus and additional plants to complete arboretum, native garden and grass meadow

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 2: Determine specific work plan to include purchase and installation of map, plant labels, etc.



Personnel Request - *none*

Non-Personnel Request - *none*

Activity 3: Visit arboretums in the region

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 4: Determine general concept and theme for arboretum, and present to appropriate committees and other groups.

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 5: Investigate potential funding sources to help maintain the Arboretum, including local groups such as California Native Plant Society, California native Grass Society, Local water districts, Natural Resource conservations District, etc.

Personnel Request - *none*

Non-Personnel Request - *none*

Activity 6: Develop and implement management strategies for the Arboretum, Native garden and Grass Meadow

Personnel Request - *none*

Non-Personnel Request - *none*

Rankings:

Ranker	Comments	Rank
Dean	Preparation must begin for the time when the STEM grant sunsets.	12
Vice-President		
Budget Committee		
President's Council		