

Bakersfield College

Comprehensive Program Review – 2017

Program Information:

Program Name: Biology AS-T

Program Type: Instructional Student Affairs Administrative Service Other

Bakersfield College Mission: Bakersfield College provides opportunities for students from diverse economic, cultural, and educational backgrounds to attain Associate and Baccalaureate degrees and certificates, workplace skills, and preparation for transfer. Our rigorous and supportive learning environment fosters students' abilities to think critically, communicate effectively, and demonstrate competencies and skills in order to engage productively in their communities and the world.

Describe how the program supports the Bakersfield College Mission:

Following the Bakersfield College Mission, the Biological Science Department provides courses and programs that support the needs of the diverse Bakersfield College student population. The General Biology AS program provides students with the opportunity to obtain scientific knowledge as the foundation to transfer to a wide variety of Baccalaureate Biology programs. Biology is the study and application of principles of cell biology, ecology, evolution, genetics, and anatomy and physiology as it relates to humans and other organisms. Laboratory and field trip activities emphasize the integrated and interdependent nature of living systems. Course work trains students to use observation and investigation to identify questions and pursue answers using the scientific method.

Graduates with an AS-T in Biology may pursue jobs in a variety of fields including; biochemistry botany, ecology, entomology, genetics, health, immunology, medicine, molecular biology, oceanography, pharmacy, teaching, wildlife management, zoology and related clinical fields. Biology majors may choose to specialize in research based on a particular organism or any aspect of biology related to those listed above. Career opportunities in Biology include many fields of biology, medical school, dental school and veterinary school.

All biology courses emphasize critical thinking and writing. This is accomplished with skill-building laboratories, field trips, discussions, and didactic teaching. The Department's teaching styles and curriculum development support the College's Strategic Directions. The Biological Science Department continues to use Student Learning Outcomes and assessment tools to align academic pathways for transfer to 4-year colleges/universities.

Program Mission Statement:

The mission of the Bakersfield College Biological Science Department is to establish high quality science education, instilling discipline competencies for students in transfer pathways supported by Bakersfield College Biology curriculum. The Department's pedagogical strategies value active learning, field experience, critical thinking, and exposure to professional and research activities. Biology Faculty is dedicated to providing rigorous Biology education that is responsive to our diverse institutional and community needs. The Department's mission supports the 2015-2018 Strategic Directions for Bakersfield College.

Instructional Programs only:

- A. List the degrees and Certificates of Achievement the program offers: Biology AS-T
- B. If your program offers both an A.A. and an A.S. degree in the same subject, please explain the rationale for offering both and the difference between the two; N/A
- C. If your program offers a local degree in addition to the ADT degree, please explain the rationale for offering both; N/A

Progress on Program Goals, Future Goals, and Action Plans:

- A. List the program's current goals. For each goal (minimum of 2 goals), discuss progress and changes. If the program is addressing more than two goals, please duplicate this section.

Current Program Goals	Which institutional goals from the 2015-2018 Strategic Directions for Bakersfield College will be advanced upon completion of this goal? (select all that apply)	Progress on goal achievement (choose one)	Comments
1. Increased departmental budget.	<input checked="" type="checkbox"/> 1: Student Learning <input checked="" type="checkbox"/> 2: Student Progression and Completion <input type="checkbox"/> 3: Facilities <input type="checkbox"/> 4: Oversight and Accountability <input type="checkbox"/> 5: Leadership and Engagement	<input type="checkbox"/> Completed: _____ (Date) <input type="checkbox"/> Revised: _____ (Date) <input checked="" type="checkbox"/> Ongoing: 2013-14 (Date)	<p>Additional funds are required to support the increase in additional Biology course offerings. Biology faculty are resourceful and always place student success as a priority. Biology faculty offer lecture class packs, written their own lab manuals to provide student's text material for free (i.e. Openstax) or at a very reasonable price and meet the Biology's Department's PLOs. Our SLOs and PLOs continue to reveal a deficiency in departmental financial support. Biology courses rely heavily on anatomical and molecular models, equipment, chemicals and solutions. The 2016-17 budget provided only \$10.55 per student.</p>

<p>2. Request for Replacement and Additional FT Biology Faculty members</p>	<p><input checked="" type="checkbox"/> 1: Student Learning <input checked="" type="checkbox"/> 2: Student Progression and Completion <input type="checkbox"/> 3: Facilities <input type="checkbox"/> 4: Oversight and Accountability <input type="checkbox"/> 5: Leadership and Engagement</p>	<p><input type="checkbox"/> Completed: _____ (Date) <input type="checkbox"/> Revised: _____ (Date) <input type="checkbox"/> Ongoing: _____ (Date)</p>	<p>Biology adjunct faculty are extremely difficult to find/hire in Kern County. Biology courses are in extremely high demand. We anticipate the retirement of three FT Biology Instructors. The replacement for retiring faculty and an additional FT Biology faculty members will provide greater access to students interested in completing their Biology courses.</p>
<p>3. Microscope Replacement and Maintenance Contract</p>	<p><input checked="" type="checkbox"/> 1: Student Learning <input checked="" type="checkbox"/> 2: Student Progression and Completion <input type="checkbox"/> 3: Facilities <input type="checkbox"/> 4: Oversight and Accountability <input type="checkbox"/> 5: Leadership and Engagement</p>	<p><input type="checkbox"/> Completed: _____ (Date) <input type="checkbox"/> Revised: _____ (Date) <input checked="" type="checkbox"/> Ongoing: __2013-14_ (Date)</p>	<p>Thanks to the BC STEM grant, microscopes located in SE-30, 31 and 38 have been replaced. The microscopes allow faculty to meet our SLOs and PLOs as well as fulfill BC's Strategic Initiative of Student Learning and Student Progression and Completion. The line item for microscope maintenance must be kept to assure that they are usable. Some of them require more complete maintenance than our technician has the time and skill to do while others are no longer repairable.</p>

4. Increase Lab Tech position from 10 month to 12 month position	<input checked="" type="checkbox"/> 1: Student Learning <input checked="" type="checkbox"/> 2: Student Progression and Completion <input type="checkbox"/> 3: Facilities <input type="checkbox"/> 4: Oversight and Accountability <input type="checkbox"/> 5: Leadership and Engagement	<input type="checkbox"/> Completed: _____ (Date) <input type="checkbox"/> Revised: _____ (Date) <input checked="" type="checkbox"/> Ongoing: 2013-14 (Date)	Biology courses require significant laboratory support. The increase of a lab technician from 10 to 12 months provides support for additional courses and as well as summer course offerings on the BC Main campus.
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B. List the program’s goals for the next three years. Ensure that stated goals are specific and measurable. State how each program goal supports the College’s strategic goals. Each program must include an action plan.

Future Goals	Which institutional goals from the 2015-2018 Strategic Directions for Bakersfield College will be advanced upon completion of this goal? (select all that apply)	Action Plan	Timeline for Completion	Lead person for this goal
1. Improve enrollment management for the extreme demand for biology courses which impede student progression and completion of STEM Pathway.	<input checked="" type="checkbox"/> 1: Student Learning <input checked="" type="checkbox"/> 2: Student Progression and Completion <input type="checkbox"/> 3: Facilities <input type="checkbox"/> 4: Oversight and Accountability <input type="checkbox"/> 5: Leadership and Engagement	Propose teaching BIOL-B11 as a hybrid course (On-line Lecture and Face-to-Face Lab). Meet with Physical Science and Math Faculty Chairs to eliminate scheduling conflicts	Fall 2018	Bill Moseley and Alexandra Dallara Joe Saldivar
2. Increase biology learning opportunities and degree completion options for students at the Delano Campus.	<input checked="" type="checkbox"/> 1: Student Learning <input checked="" type="checkbox"/> 2: Student Progression and Completion <input type="checkbox"/> 3: Facilities <input type="checkbox"/> 4: Oversight and Accountability <input type="checkbox"/> 5: Leadership and Engagement	Obtain an increase in departmental budget to equip DS-107 (Biology Lab) with a complete set of models for all courses offered at the BC Main Campus.	Fall 2019	Joe Saldivar

Best Practices:

Programs often do something particularly well; usually they have learned through assessment – sometimes trial and error – what solves a problem or makes their programs work so well. These are often called Best Practices and can help others. Please share the practices your program has found to be effective.

- Biology faculty have prepared and authored lecture-note packets and/or lab manuals that accurately reflect the topics and depth of material covered from each respective text chapter. The Instructors' laboratory manuals utilize lecture text as a reference to reinforces lecture concepts in the laboratory environment.
- Departmental Mentoring of Adjunct and New FT faculty; Courses are scheduled so that new Adjunct and FT faculty have the opportunity to attend their mentor's lectures and labs session to ensure that new faculty and adjuncts understand the rigors and standards expected of our students.
- Designate several "Student Hours" a week as group study/tutoring sessions; Sessions are held in a lab or classroom, rather the faculty member's office. The study sessions are held at a time when the instructor and students discuss difficult concepts in an informal and relaxed setting. More students attend these group study/tutoring sessions than regular office hours (one-on-one with the instructor), and as such, faculty can assist a greater number of students, many of whom would not normally attend office hours.
- Modeling; Biology faculty are extremely engaged in activities that range field trips, campus committees, club advising, statewide and national committee work. Biology faculty take on responsibilities above and beyond our contractual obligations. No one wants to be the "lazy" instructor within the department. This feeds our departmental culture of providing an excellent educational classroom experience and implementing strategies that would allow students to attain their academic, professional and personal goals.
- Delano Scheduling; The Biology Department does not see the BC Main Campus and the Delano Center as "us" and "them". FT Biology faculty are hired with the knowledge that they will teach courses at the BC Main Campus and the Delano Center. FT Biology faculty teach Biology courses in Delano on a rotational basis and provides students with the opportunity to obtain a wonderful educational experience from a diverse of wonderful group of faculty.

3 Year Program Analysis:

Take a look at your trend data. Provide an analysis of program data throughout the last three years (all programs should have some form of data that is used to look at changes over time) and report:

1. Changes in student demographics (gender, age and ethnicity).
 - 67% Female (Collegewide – 54%)
 - 60% Age 20-29 (Collegewide – 45%)
2. Changes in enrollment (headcount, sections, course enrollment, and productivity).
 - Biology majors; +24%
 - Biology sections offered; +9%
 - First Day Enrollment; +6.6%
 - Census Day Enrollment; +11.8%
 - FTES; +12.8%
 - FTEF Workload; +12%

3. Changes in achievement gap and disproportionate impact.
 - Biology Success & Retention rates mirror Collegewide numbers
4. Success and retention for face-to-face as well as online/distance courses.
 - Face-to-face Biology success and retention rates mirror Collegewide numbers
 - The Biology Department does not teach any courses as Distance Ed
5. Any unplanned events that affected your program?
 - Transition from General Biology AS Degree to Biology AS-T
 - Strong Work Force Grant provided funding of several laboratory models
 - Lab Technician in Delano to provide support to Biology and Physical Science faculty
6. Degrees and certificates awarded (three-year trend data for each degree and/or certificate awarded).
 - General Biology AS – 54
 - Biology AS-T - 1
7. Reflect on any changes you would like to see in your program in the next 3 years.
 - Full transition to Biology AS-T
8. List degrees and certificates awarded (three-year trend data for each degree and certificate awarded). Include targets (goal numbers) for the next three years.

Full Name of Degree or Certificate	2015- 2016	2016- 2017	2017- 2018	2018- 2019	2019- 2020	2020- 2021
General Biology - AS	17	21	10	0	0	0
Biology AS-T		1	20	30	35	40

Resource Request and Analysis:

Resource Request		If Fulfilled, Discuss How Previous Year's Requests Impact Program Effectiveness?
Positions: <i>Discuss the impact new and/or replacement faculty and/or staff had on your program's effectiveness.</i>	<input type="checkbox"/> 1: Classified Staff <input checked="" type="checkbox"/> 2: Faculty	BC Administration granting the replacement of retired faculty and the hiring of adjunct faculty (we now have three adjuncts) has allowed the BC Biology Department to increase course offerings, headcount and productivity.
Professional Development: <i>Describe briefly, the effectiveness of the professional development</i>	<input checked="" type="checkbox"/> 1: Provided Professional Development <input checked="" type="checkbox"/> 2: Attended Professional Development	Renegade Talks Levan Colloquium One Book Bakersfield Gad Fly Café

<p><i>your program has been engaged in (either providing or attending) during the last cycle</i></p>		<p>A+ Scholars STEM MESA SI Emergency Medical Research Assistant Program Guided Pathways Canvas Active Teaching in the Classroom Completion Coaching/Training Critical Thinking</p>
<p>Facilities: <i>If your program received a building remodel or renovation, additional furniture or beyond routine maintenance, please explain how this request or requests impacts your program and helps contribute to student success.</i></p>	<p><input type="checkbox"/> 1: Space Allocation <input type="checkbox"/> 2: Renovation <input type="checkbox"/> 3: Furniture <input type="checkbox"/> 4: Other <input checked="" type="checkbox"/> 5: Beyond Routine Maintenance</p>	<p>Exterior painting and re-tar of the roof of MS and SE building. The aesthetics of a brand-new coat of paint is very pleasing to the eye and to increased student and staff moral. Thank you.</p>
<p>Technology: <i>If your program received technology (audio/visual – projectors, TV’s, document cameras) and computers, how does the technology impact your program and help contribute to student success?</i></p>	<p><input checked="" type="checkbox"/> 1: Replacement Technology <input type="checkbox"/> 2: New Technology <input type="checkbox"/> 3: Software <input type="checkbox"/> 4: Other _____</p>	<p>Document cameras in the SE building were upgraded in 2015. The lecture halls and laboratories have uniform technology.</p>
<p>Resource Request</p>		<p>Discuss How Effective Request is for Student Success?</p>

<p>Other Equipment: If your program received equipment that is not considered audio/visual or computer equipment technology, please explain how these resources impact your program and help contribute to student success.</p>	<p><input type="checkbox"/> 1: Replacement <input checked="" type="checkbox"/> 2: New <input type="checkbox"/> 3: Other _____</p>	<p>A one-time budget increase and money from the Strong Work Force grant funded the purchase of models and equipment that will allow faculty to offer additional course offerings and maintain laboratory standards seen in the private sector and at transfer institutions.</p>
<p>Budget: Explain how your budget justifications will contribute to increased student success for your program. (Fiscal requests will be submitted by the faculty chair and/or area administrator.)</p>		<p>A one-time budget increase and money from the Strong Work Force grant funded the purchase of models and equipment that will allow faculty to offer additional course offerings and maintain laboratory standards seen in the private sector and at transfer institutions.</p>

Conclusions & Snapshot:

Present any conclusions and findings about the program. This is an opportunity to provide a brief abstract or synopsis of your program’s current circumstances and needs. Consider this a snapshot of your program, if someone were to only read this portion of your Comprehensive Review.

The BC Biology Department approaches the study of biology with cutting edge technology and content. The courses emphasize hands on learning and high quality, effective teaching strategies. Field work and real-life applications of science are highly valued as an important component for all students whether targeting transfer, workforce, or general science education.

The BC Biology Department is positioned to meet Bakersfield College’s vision Guided Pathways; Clarity (Biology AS-T), Intake (Increased course offerings), Support (i.e. SI, MESA, STEM Aera Center, Library Workshops...) and Learning (Faculty mentoring and field trips). We require an increased department budget, increased laboratory tech support and replacement faculty to accomplish these goals.

- “According to research, careers in science, technology, engineering and math (STEM) are growing 2-3 times faster than any other career field. Bakersfield College’s effort to increase student participation and success in STEM careers is apparent in many of our efforts on campus and in the community (HerWorld).” – President Sonya Christian, Bakersfield College President’s Blog; <http://bcpresident.wordpress.com/>

Lastly, we truly believe that the BC Biology Department is the “Best Department” on campus. Student success is the driving force behind all our departmental decisions.