

Bakersfield College
Program Review – Annual Update
2016-2017

Program Name: **Geology (includes earth science and geography curriculum)**

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:

The geology program supports the overall BC mission by serving our community with various geology courses that support employment prospects within the Bakersfield community and surrounding areas. In fact, several geology graduates are employed in the petroleum industry, which includes Bakersfield and surrounding communities. It is the mission of the geology program at BC to provide quality instruction that prepares each student with the necessary academic tools to seek employment in the field of geology.

Program Mission Statement:

The primary mission of the geology program is to serve students seeking CSU/UC transfer into the undergraduate BS geology degree, satisfy core science requirements toward the AA community college degree, and give students the opportunity to gain invaluable geological knowledge for geology employment.

Instructional Programs only:

- A. List the degrees and Certificates of Achievement the program offers
The geology department offers the AS-T degree for Transfer in geology

- 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.

- C. If your program offers a local degree in addition to the ADT degree, please explain the rationale for offering both.

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Progress on Program Goals:

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 (2) goals, please duplicate this section. Please provide an action plan for each goal that gives the steps to completing the goal and the timeline.

Program Goal	Which institutional goals from the Bakersfield College Strategic Plan will be advanced upon completion of this goal? (select all that apply)	Progress on goal achievement (choose one)	Status Update – Action Plan
<p>1. Construction of the Geology Rock Garden</p>	<p><input checked="" type="checkbox"/> Student Learning <input 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: Aug 2018 (Date)</p>	<p><i>The geology rock garden proposal is nearing completion, however, various “snafu’s” have been encountered. For example, contractors are not available or not willing to pour a concrete slab in the shape of California. This project is ongoing with further investigation. Currently, the geology department is working with the industrial department regarding various materials to complete the rock garden. In addition, the geology department has identified the rock types and schematic for rock garden completion.</i></p>
<p>2. MS-6 Showcase Lab Completion</p>	<p><input checked="" type="checkbox"/> Student Learning <input 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: Aug 2018 (Date)</p>	<p><i>The MS6 showcase lab is nearing completion. We are waiting for the computer that was ordered last year for the weather station set up which will complete the showcase lab. Invoices show the computer did arrive to the campus, but it was never delivered to the geology department??</i></p>

Program Goal	Which institutional goals from the Bakersfield College Strategic Plan will be advanced upon completion of this goal? (select all that apply)	Progress on goal achievement (choose one)	Status Update – Action Plan
3. Review declared geology major's transcript's for math requirements	<input checked="" type="checkbox"/> Student Learning <input type="checkbox"/> 2: Student Progression and Completion <input type="checkbox"/> 3: Facilities <input checked="" type="checkbox"/> 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: Continuous (Date)	<i>Most geology majors are deficient in math requirements that apply to the AS-T degree in geology. It is the geology department faculty goal to oversee geology major's course selection and encourage students to complete their math requirements prior to completing the required physical geology and historical courses.</i>

Program Goal	Which institutional goals from the Bakersfield College Strategic Plan will be advanced upon completion of this goal? (select all that apply)	Progress on goal achievement (choose one)	Status Update – Action Plan
4. Reactivate the Bakersfield College Geology club inviting actual geology majors and participate in geology and BC club activities	<input checked="" type="checkbox"/> Student Learning <input 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 checked="" type="checkbox"/> Completed: _Spring 2017_ (Date) <input type="checkbox"/> Revised: _____ (Date) Ongoing: _____	<i>The Geology club is rejuvenated. The club consist of 3 officers and averages 8-12 members during the semester. The club is open to all majors and typically contains at least 60% geology majors.</i>
5. Implement SI leaders for both geology and earth science classes. Both courses enroll 100+ students when sections are combined.	<input checked="" type="checkbox"/> Student Learning <input 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 checked="" type="checkbox"/> Completed: Spring 2017 (Date) <input type="checkbox"/> Revised: _____ (Date)	<i>Implementation of SI leaders was completed in January of 2017. SI leaders will continue in subsequent semesters.</i>

B. List new or revised goals (if applicable)

New/Replacement Program Goal	Which institutional goals will be advanced upon completion of this goal? (select all that apply)	Status Update – Action Plan
Fully Complete goals described above	<input checked="" type="checkbox"/> Student Progression and Completion <input type="checkbox"/> 3: Facilities <input type="checkbox"/> 4: Oversight and Accountability <input type="checkbox"/> 5: Leadership and Engagement	With the new addition of 1-full time geology faculty, pending goals described above will receive “double” the attention and will be completed.

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.

The geology/earth science program primarily supports students who are completing geology, earth science and geography classes as a core requirement for their degree. However, it is common for some students to take a higher level of interest in our program and change their major to geology, earth science or geography. Typically, students change their majors in part because our program works well to excite and raise the students’ hidden passion for science. Throughout the semesters, faculty members of the geology program have adopted several positive instructing strategies that promote higher levels of student retention and increased student passion for the content material. Below are brief descriptions of various instructing strategies use by instructors that demonstrate best practices used in our program.

The use of I>Clickers

During lectures and lab, instructors employ the use of I>clickers to check student understanding and allow students to observe how well they understand the material compared to the class. Additionally, students are 100% (even a class of 100+ students) engaged as they work in small groups discussing a particular I>clicker question. After a question has been discussed and answered using the I>clicker the instructor and class view the histogram (bar graph) and if the class achieves a 100% bar response, the instructor rewards the class with extra credit points towards the next exam. This activity encourages students communicate to one another and discuss verbally the answer to the question ultimately increasing comprehension of the topic.

Get the student to read the chapter BEFORE attending class lecture

Students complete various chapter reviews before hearing the actual lecture. With this strategy, faculty have observed that students are better prepared to comprehend content material and student questions are commonly ask at higher levels within Bloom’s Taxonomy.

Holding students accountable during lab/lecture class

During many lecture/lab class settings, instructors have created various methods that randomly call on students for answers. For example, some instructors pull student names from a “container” or a “computer generated spinning wheel” and require them to answer a question “on the spot”. Using this strategy, Instructors have observed that student attention is exponentially increased and all students are held accountable for answering questions as opposed to the few that typically blurt out responses.

Curriculum Alignment workshops before each semester

The geology program implements a curriculum alignment workshop prior to each fall and spring semester. All instructors (full time and adjunct) meet and separate into their particular content area and compare syllabi to align both lecture and lab content. In other words, a student can take a geology lecture with one instructor and the geology lab with a different instructor. Instructors align content material so that students are taught the same content from different instructors. Faculty has observed that the curriculum alignment has eliminated student confusion regarding “where are we” and highly strengthens retention of concepts within our program.

The above instructing strategies represent a few of our programs best practices which continues to strengthen the programs retention rates and inspire students to pursue a major in geology, earth science or geography.

Program Analysis:

Take a look at your trend data (all programs should have some form of data that is used to look at changes over time).

1. Please report on any unexpected changes or challenges that your program encountered this cycle:
There are no unexpected changes or challenges to report.
2. How does your trend data impact your decision making process for your program?
Trend data does not impact decisions for making process. Geology, Earth Science and Geography courses are taught
3. Were there any changes to student success and retention for face-to-face, as well as online/distance courses?
There are no changes
4. Were there any changes to student demographics (age, gender, or ethnicity) for the past cycle?
There have been no significant changes with respect to gender, age and ethnicity within the geology program. However, during the last 3 years, students between 20-29 years of age average 64.6% of the student population enrolled in geology courses with students age 40 or older slightly decreasing from 7% to 5% of the student population. Hispanics/Latino populations dominate geology enrollment with 68% of the population over the last 3 years.

Resource Request and Analysis:

Resource Request		If Fulfilled, Discuss How Previous Year's Requests Impact Program Effectiveness?
<p>Positions: <i>Discuss the impact new and/or replacement faculty and/or staff had on your program's effectiveness.</i></p>	<input type="checkbox"/> 1: Classified Staff <input type="checkbox"/> 2: Faculty	<p><i>No impact – however, the geology department has acquired 1-new full-time faculty beginning Fall 2017.</i></p>
<p>Professional Development: <i>Describe briefly, the effectiveness of the professional development your program has been engaged in (either providing or attending) during the last cycle</i></p>	<input type="checkbox"/> 1: Provided Professional Development <input type="checkbox"/> 2: Attended Professional Development	<p><i>There has been no engagement of Professional development activities.</i></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>	<input type="checkbox"/> 1: Space Allocation <input type="checkbox"/> 2: Renovation <input type="checkbox"/> 3: Furniture <input type="checkbox"/> 4: Other <input type="checkbox"/> 5: Beyond Routine Maintenance	<p><i>There has been no additional facilities impact.</i></p>

<p>Technology: 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?</p>	<input type="checkbox"/> 1: Replacement Technology <input type="checkbox"/> 2: New Technology <input type="checkbox"/> 3: Software <input type="checkbox"/> 4: Other _____	<p><i>There has been no technology impact.</i></p> <p><i>However, the program did not receive a computer for our MS-6 weather station and according to invoices, the computer was in fact delivered to the BC campus, but the computer was never delivered to our showcase lab inventory in MS-6 ---- therefore, we have an inoperable weather computer station.</i></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>	<input type="checkbox"/> 1: Replacement <input type="checkbox"/> 2: New <input type="checkbox"/> 3: Other _____	<p><i>The program did not receive additional equipment.</i></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><i>The budget is ambiguous regarding the geology program.</i></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 annual program review.

The geology program at BC is healthy this year with enrollments high and acquiring our additional new full-time geology instructor. The primary mission of the geology program is to serve students seeking CSU/UC transfer into an undergraduate BS geology degree program, satisfy core science requirements toward the AA community college degree, and give students the opportunity to gain invaluable geological knowledge for geology employment. The AS-T degree in geology is designed to provide students a clear pathway to the CSU geology major and completion of the geology baccalaureate degree, to grant guaranteed admission to a CSU for a similar major, with junior standing, and to provide the ability to complete their remaining requirements within 60 semester or 90 quarter units. In fact, several students majoring in geology at BC are aware of the AS-T geology degree and are already completing various geology and other required courses in line with the AS-T geology degree. Therefore, it's anticipated that there will be future geology degrees earned in subsequent academic years. However, statistics and exit interviews of geology students indicate that many geology majors arrive to Bakersfield College underprepared to complete the math requirement for the AS-T transfer degree. Therefore, geology majors in this circumstance typically complete all courses towards the AS-T geology degree at Bakersfield College, with the exception of the math requirement, and transfer to a four-year institution and therefore shows that our geology department does not grant AS-T geology degrees. In the future, it would be advantages to "track" our geology transfers and receive credit for their higher learning achievements. Currently, the future outlook for geology employment is slow due to falling oil prices, but the goal of BC is to provide the necessary geology coursework for transfer students to make a smooth transition into the CSU system and pursue higher-level geology degrees which includes both geology majors and non-geology majors.

Faculty members of the BC geology program continue to strengthen communication and activities with faculty at the CSUB geology program. As ongoing activities within our geology department, the construction of the geology rock garden is currently underway and, when completed, will serve both faculty and students regarding the geology of California. In addition, it is anticipated that our geology showcase lab will be fully complete with various hands on activities that both college and K-12 educational levels will benefit in the processes of our earth. A total of 14 geology-related courses, including geography courses, are currently scheduled for curriculum review within the next five years, updating each course under the 6-year review cycle.