**Bakersfield College**

**Comprehensive Program Review**

**I. Program Information:**

Program Name:

Program Type: **X** Instructional [ ]  Student Affairs [ ]  Administrative Service

***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.***

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| ***Instructional Programs only:***1. List the degrees and Certificates of Achievement the program offers

 ***The geology department offers the AS-T degree for Transfer in geology***1. If your program offers both an A.A. and an A.S. degree in the same subject, please explain the rationale for offering both.
2. If your program offers a local degree in addition to the ADT degree, please explain the rationale for offering both.
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**II. Progress on Program Goals, Future Goals, and Action Plans:**

1. 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.

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| **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. ***MS-6 Showcase Lab Completion*** | **X** 1: Student Learning [ ]  2: Student Progression and Completion [ ]  3: Facilities [ ]  4: Oversight and Accountability [ ]  5: Leadership and Engagement  | [ ]  Completed: \_\_\_\_\_\_\_\_\_\_ (Date) [ ]  Revised: \_\_\_\_\_\_\_\_\_\_ (Date)**X** Ongoing: **Aug 2017** (Date) | ***The MS6 showcase lab is nearing completion. Various showcase items have been purchased, however assembly of items and arranging the items within the lab is still needed. It is our goal to have all items set up and ready to show to K-12 and college students by August 2017*** |
| 2. ***Construction of the Geology Rock Garden*** | [ ]  1: Student Learning [ ]  2: Student Progression and Completion [ ]  3: Facilities [ ]  4: Oversight and Accountability [ ]  5: Leadership and Engagement  | [ ]  Completed: \_\_\_\_\_\_\_\_\_\_ (Date) [ ]  Revised: \_\_\_\_\_\_\_\_\_\_ (Date)**X** Ongoing: **Aug 2017** (Date) | ***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.*** |

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| 3. ***Completion of updated Earth Science and Geology lab books.*** | **X** Student Learning [ ]  2: Student Progression and Completion [ ]  3: Facilities [ ]  4: Oversight and Accountability [ ]  5: Leadership and Engagement  | [ ]  Completed: \_\_\_\_\_\_\_\_\_\_ (Date) [ ]  Revised: \_\_\_\_\_\_\_\_\_\_ (Date)**X** Ongoing: **Aug 2017** (Date) | ***With the recent acquisition of showcase lab equipment and materials, the geology instructional staff will update both Earth Science and Geology lab manuals that will include activities and various leaning strategies used with newly showcase lab equipment.***  |
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1. 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.

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| **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** |
| ***Reactivate the Bakersfield College Geology club inviting actual geology majors and participate in geology and BC club activities*** | ***X Student Learning*** [ ]  2: Student Progression and Completion [ ]  3: Facilities [ ]  4: Oversight and Accountability ***X Leadership and Engagement***  | * ***Advertise to students the opportunity to join the geology club.***
* ***Plan club meeting and present overview of possible club activities and club goals responsibilities***
* ***Select and elect club officers***
* ***Build club membership***
 | ***Begin club membership drive in January 2017 and maintain a thriving club membership by August 2019*** | ***Jack Pierce*** |
| ***Implement SI leaders for both geology and earth science classes. Both courses enroll 100+ students when sections are combined.*** | **X Student Learning** [ ]  2: Student Progression and Completion [ ]  3: Facilities [ ]  4: Oversight and Accountability [ ]  5: Leadership and Engagement  | * ***Contact geology/earth science faculty for SI instructor recommendations***
* ***Implement SI leader process with SI program manager***
 | ***Begin SI leader campaign in January 2017 and have SI leaders in place by Aug 2019*** | ***Jack Pierce*** |
| ***Review declared geology major’s transcript’s for math requirements*** |  **X** **Student Learning** [ ]  2: Student Progression and Completion [ ]  3: Facilities **X Oversight and Accountability** [ ]  5: Leadership and Engagement  | ***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.***  | ***Begin transcript reviews January 2017*** | ***Jack Pierce******BC geology faculty*** |

**III. Trend Data Analysis:**

Review the data provided by Institutional Research. Provide an analysis of program data throughout the last three years, including:

1. Changes in student demographics (gender, age and ethnicity).

***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% 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 65% of the population over the last 3 years.***

1. Changes in enrollment (headcount, sections, course enrollment, and productivity).

***Enrollment numbers have decreased within the last 3 years from 712 students (2013-14) to 632 (2015-16). Active sections have decreased from 16 offered sections (2013-14) to 13 sections offered in 2015-16. Subject productivity FTES/FTEF have steadily increased from 18.8 (2013-14) to 20.4 in 2015-16, surpassing the accepted target of 17.5 Data indicate an 11% drop in geology enrollment over the last 3-years; However, geology, earth science and geography lecture/lab courses continue to reach maximum enrollment each semester with waiting lists filled to capacity and waitlisted students not able to register in classes by census date. At present, BC offers a total of 2 geology B10 sections with 3 sections of geology B10L, 3 sections of earth science B10 with 4 sections of earth science B10L and 3 sections of geography B1 with 3 sections of geography B1L as well as 2 sections of geography B2. During fall semesters, BC main campus offers 1- section of geology B11 with 1-section of geology B11L. Porterville and Cero Coso campuses offer 1-section of both earth science B10 and B10L sections as well as 1-section of geology B10 and B10L sections. The geology program is supported by 2 full-time (1-geololgy, 1-geography instructor) and 7 adjunct professors.***

1. Changes in achievement gap and disproportionate impact.

***There have been no significant changes.***

1. Success and retention for face-to-face as well as online/distance courses.

***The geology program shows an overall improvement of student success and retention since the 2011-2012 school year. During the 2011-2012 school year, student retention was 84.7% and has improved in 2012-2013 to 88.5%, resulting in a 3.8% increase in the student success and retention rate.***

1. Degrees and certificates awarded (three-year trend data for each degree and/or certificate awarded).

***There have been no certificates or degrees awarded for the comprehensive program review cycle (2013-2015). However, data shows that most students majoring in geology at BC transfer to a 4-year undergraduate geology program prior to receiving the AS-T transfer degree in geology. Geology faculty at Bakersfield College continues to encourage all geology majors to complete the AS-T degree in geology explaining the benefits of the degree program. Most students complete all the necessary course work for the AS-T degree (Physical geology, Historical Geology, Chemistry ect.. ) but are commonly deficient in the Math requirement (Calculus I an II) and therefore elect to continue the degree and a four year institution. It would be interesting to collect data from BC geology majors that have continued and graduated from a 4-year institution.***

1. *Number of degrees earned in geology at BC in the future.*

***Average number of geology majors during the comprehensive program review cycle is 84. However, from 2014 to 2015 majors have decreased from 97 (highest in 2014) to 71 declared geology majors in 2015 indicating a 26% drop. Bakersfield College possesses a wealth of potential geology majors and future awarded AS-T degrees. It is the goal of the geology department to “help” students achieve their AS-T geology math course requirements therefore increasing the probability of future awarded AS-T degrees in geology at Bakersfield College.***

1. Other program-specific data (please specify or attach).

***NONE***

1. List degrees and certificates awarded (three-year trend data for each degree and certificate awarded). Include targets (goal numbers) for the next three years.

***NONE***

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| Full Name of Degree or Certificate | 2011- 2012 | 2012- 2013 | 2013- 2014 | 2014- 2015 | 2015- 2016 | 2016- 2017 |
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**IV. Program Assessment:**

Use attached **Assessment Report Form Comprehensive Tab**

1. Discuss your program’s strengths.

***Establishment of the AS-T degree in geology significantly strengthens the geology program in terms of attracting students who will emerge with a solid degree guaranteeing transferability at junior-level status to any CSU/UC institution.***

***The BC geology program continues to refine and streamline our curriculum through alignment meetings. Curriculum alignment meetings are held after each semester for the purpose of preparing content alignment for both lecture and lab topics. All geology/earth science instructors (full-time and adjunct) align their syllabi with content topics to ensure that students receive consistent instruction regardless of who (instructor) is instructing the class.***

***Significant changes within the BC geology program have contributed to a stronger relationship with Cal State University Bakersfield (CSUB) geology program. Continued collaboration between both BC and CSUB instructors has resulted in increased geology student transfers, BC students concurrently completing geology-related classes on both campuses, CSUB geology field trips with invited BC students, and BC students being given the opportunity to participate in extracurricular geology-related activities.***

1. Discuss your program’s weaknesses.

***There has been no significant change regarding program weaknesses. However, it would be of great value if the college, as a whole, would devote more resources toward professional development outside the college, such as providing funding for memberships in professional organizations and financial support toward attending professional conferences, such as the Great Teachers’ Seminar.***

1. *If applicable,* describe any unplanned events that affected your program.

***NONE***

**V. Resource Analysis:** To request resources (staff, faculty, technology, equipment, budget, and facilities), please fill out the appropriate form. <https://committees.kccd.edu/bc/committee/programreview>

1. Human Resources and Professional Development:
2. If you are requesting any additional positions, explain briefly how the additional positions will contribute to increased student success. Include upcoming retirements or open positions that need to be filled.

***The geology department is requesting one additional full-time geology faculty member to instruct geology courses. Currently, the geology program consists of one full-time earth science professor, instructing both geology and 100% of earth science courses, and 5 adjunct faculty. The geology program is requesting an additional full-time geology instructor given the fact the degree program supports the AS-T degree in geology and at this time a full-time geology instructor is not officially listed as part of BC faculty. Historically in 2008, Professor Pierce was hired as the full-time earth science professor and worked alongside the full-time geology instructor. However, in the past several years (since 2008) two geology instructors have left BC and the current status of our geology program is without a full-time geology instructor on record. Currently, the geology program is heavily dependent on adjunct faculty instructing primary courses towards the AS-T degree in geology and their instructional load has reached the maximum allowable hours of instruction. The additional geology instructor position will contribute to student success by allowing additional geology classes to be taught as well as having another onsite full-time geologist to serve our current geology majors. As the Delano campus student population increases, the need to instruct both a geology and earth science course simultaneously may exist. Additionally, field studies (field trips) are important geologic learning activities that enhance geological concepts, promote enthusiasm and increases STEM interest. It is essential to have at least two full-time geology instructors that work together orchestrating scheduling and locations of field studies to accommodate the increasing number of current Bakersfield College geology students.***

***Although Geology declared majors have decreased over the last 3 years from a high of 97 to currently 71 with an average of 69 geology majors per year, Geology, Earth Science, and Geography courses service many students who are not STEM majors and need a Physical Science GE credit. Historically over the last three plus years, wait lists in Geology, Earth Science and Geography courses are full to capacity prior to every semester. Many non-science major students at Bakersfield College elect not to enroll in Chemistry or Physics courses and opt for Geology, Geography, and Earth Science, thinking that these courses will be easier.  In a slow semester, the Geology/Earth Science portion of the Physical Science department serves over 400 students.  The fall of 2016, we offered one of our lesser-known class, GEOL B11-Historical Geology, and in three weeks this 90-person-class was filled.  In 22 days, there was a waitlist.  This class could not be offered without employing a temporary full time position every fall semester, as all of our adjunct faculty are at their maximum load." Additionally, the geology department would like to continue with mentoring geology club activities and increase club membership, completing both earth science and geology lab book updates, complete the showcase lab and allow students to have access to an additional onsite full-time faculty geology instructor.***

1. Professional Development:
2. Describe briefly the effectiveness of the professional development your program has been engaged in (either providing or attending) during the last year, focusing on how it contributed to student success.

***Our adjunct instructor, Cari Meyer attended the NAGT (National Association of Geoscience Teachers) meeting in Santa Barbara last spring. The efforts of this meeting allowed the setup of our virtual sand box which will be activated for students in the fall 2016 semester.***

1. What professional development opportunities and contributions can your program make to the college in the future?

***With the completion of the Showcase lab, students will be able to participate in various hands-on activities.***

1. Facilities:
2. How have facilities’ maintenance, repair or updating affected your program in the past year as it relates to student success?

***Areas of maintenance repair include fixing lights in the geology prep room and new locks installed on MS building doors. Additionally, previously broken chairs have been repaired and anchored to the floor in MS-2. The geology prep room is now a “working prep room” (we can see) for instructors to prepare quality lab activities and exams which have given students the opportunity to work with well-designed, high-quality lab exercises. Repaired chairs in MS-2 are safe for students, opening up more chairs for student enrollment.***

1. How will your Facilities Request for next year contribute to student success?

***Currently, there are no facilities requests***

C. Technology and Equipment:

1. Understanding that some programs teach in multiple classrooms, how has new, repurposed or existing technology or equipment affected your program in the past year as it relates to student success?

***The geology program has not received new repurposed technology in this cycle.***

1. How will your new or repurposed classroom, office technology and/or equipment request contribute to student success?

***The geology program has not received new repurposed technology in this cycle.***

1. Discuss the effectiveness of technology used in your area to meet college strategic goals.
2. Budget: Explain how your budget justifications will contribute to increased student success for your program.

***Budget justifications for the geology program lies within the Physical Science department.***

**VII. Faculty and Staff Engagement:**

1. Discuss how program members have engaged in institutional efforts such as college committees, presentations, and departmental activities.

***Both full time instructors (geology and geography) are currently serving in the safety and commencement committees.***

1. Instruction Only: Discuss how adjunct faculty are included in departmental training, discussions and decision-making.

***Currently, adjunct faculty instructors attend semester curriculum alignment meetings where topics (geology/earth science) are aligned to match the syllabi schedules of each instructor. In other words, students attending a lab class with a different instructor will be completing labs in the same sequence as any lectures.***

**VIII. Conclusions and Findings:**

Present any conclusions and findings about the program. This is an opportunity to provide a brief abstract/synopsis of your program’s current circumstances and needs.

***The geology program at BC is healthy in spite of one full-time geology/earth science 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 at BC have been made 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 is 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.***