

Bakersfield College

Program Review – Annual Update

Program Name:

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 Engineering program supports the BC mission through preparation for transfer. A Baccalaureate in an engineering discipline is a valuable asset nationally and across economic sectors while an Associate degree opens very few pathways into the work force, thus few BC students obtain an AS on the way to their BS. The Engineering curriculum is designed to provide multiple pathways for transfer, rather than being a “feeder” to a particular university. This is accomplished by aligning its courses to match statewide C-ID descriptors, improving the odds of successful transfer to BS-granting programs after 2-3 years of general education and engineering-specific course work at BC.**

Program Mission Statement: **The Engineering Program strives to prepare students for transfer to BS-granting programs across the state of California and beyond. While the study of Engineering does help generate basic skills (computer-drafting, spreadsheet competency, public speaking skills, report-writing competency) and foster critical thinking (complex problem-solving, analyzing assumptions, eliminating ambiguity) its primary purpose is to provide coursework that makes its students appealing transfer candidates to BS-grating programs. While most of the coursework has rigorous limitations on enrollment (pre-requisites set by state C-ID criteria) it is the goal of the faculty and staff to use counseling and outreach to make this program accessible to all interested students, regardless of age, socioeconomic status, gender, ethnicity or previous educational background.**

Instructional Programs only:

- List the degrees and Certificates of Achievement the program offers **Engineering (AS)**
- 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**
- 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:

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. Continue to address the gaps in core indicators, particularly the gap in female enrollment.</p>	<p><input type="checkbox"/> 1: Student Learning <input type="checkbox"/> 2: Student Progression and Completion <input type="checkbox"/> 3: Facilities <input type="checkbox"/> 4: Oversight and Accountability <input checked="" type="checkbox"/> 5: Leadership and Engagement</p>	<p><input type="checkbox"/> Completed: _____ (Date) <input type="checkbox"/> Revised: _____ (Date) <input checked="" type="checkbox"/> Ongoing: <u>9/8/2017</u> (Date)</p>	<p>Currently, most of the outreach for the Engineering program takes place in student organization activities (such as the “Design Challenge” by the Engineers Club or “Noche De Ciencias” by the HOPES Club). Other outreach programs like SPE “Engineering Day” bring local high school students to campus to increase awareness of the Engineering Program to potential incoming freshman. Participation in other events (Philippine Weekend, MESA/STEM Conference) occurs as available.</p>
<p>2. Improve clearly communicated pathways for engineering students by strengthening communication with Project Lead the Way (PLTW) programs at the high schools and middle schools.</p>	<p><input 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 checked="" type="checkbox"/> 5: Leadership and Engagement</p>	<p><input type="checkbox"/> Completed: _____ (Date) <input type="checkbox"/> Revised: _____ (Date) <input checked="" type="checkbox"/> Ongoing: <u>9/8/2017</u> (Date)</p>	<p>Faculty participation in PLTW events like the Design Competition at Highland High School will continue in the future. Visits to Delano High Schools should also improve communication and articulation.</p>
<p>3. Develop a summer research program for engineering majors in collaboration with CSUB.</p>	<p><input 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 checked="" type="checkbox"/> Completed: <u>8/17/2017</u> (Date) <input type="checkbox"/> Revised: _____ (Date) <input type="checkbox"/> Ongoing: _____ (Date)</p>	<p>Two summer workshops related to hardware/software integration and chemical engineering were planned and successfully executed with collaboration between BC and CSUB faculty and integration of BC and CSUB students.</p>

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
1. N/A (ongoing goals have priority)	<input type="checkbox"/> 1: 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	

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.

1. Support programs like MESA help students by providing free tutoring, books, and computer/printing access, guest speakers on professional development, etc.
2. STEM Assistants and Supplemental Instruction tutors have been valuable in retention and student success
3. Engineering Student Organization (such as HOPES, Engineers Club, WISE) provide leadership opportunities, professional development, financial assistance and access to national professional networks

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:
The ENGR program continues to grow rapidly (a 12% increase in enrollment from AY15-16 and 60% increase since AY 12-13). Availability of work space (SE-45) requires more attention in scheduling than previous years and could be an issue if enrollment continues at this rate.
2. How does your trend data impact your decision making process for your program?
The growth of the program has led to increased attention to potential scheduling conflicts with PHYS, CHEM and MATH and led to the purchase of additional equipment to improve lab experience.
3. Were there any changes to student success and retention for face-to-face, as well as online/distance courses?
After a three-year period of incremental improvements in both student success and retention, AY 15-16 and AY 16-17 both showed small decreases. Following the large influx of students, this is not surprising, but extra attention will be paid to student support to address this trend.
4. Were there any changes to student demographics (age, gender, or ethnicity) for the past cycle?
No major changes in demographics occurred in this past cycle. Most categories match college-wide data. Exceptions like female enrollment will require long-term attention.

Resource Request and Analysis:

Resource Request		If Fulfilled, Discuss How Previous Year's Requests Impact Program Effectiveness?
<p>Positions: Discuss the impact new and/or replacement faculty and/or staff had on your program's effectiveness.</p>	<input type="checkbox"/> 1: Classified Staff <input checked="" type="checkbox"/> 2: Faculty	<p>One new, full-time ENGR faculty was added in each of the last two years. This has resulted in increased section offerings. This will result in new course offerings, both at the Panorama campus and in Delano within the next year. We will be losing one of these instructors effective September 30 of this year.</p>
<p>Professional Development: Describe briefly, the effectiveness of the professional development your program has been engaged in (either providing or attending) during the last cycle</p>	<input type="checkbox"/> 1: Provided Professional Development <input type="checkbox"/> 2: Attended Professional Development	<p>N/A</p>
<p>Facilities: 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.</p>	<input checked="" 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>ENGR course offerings are reaching a limit because of available lab space. Courses like ENGR B45 and ENGR B47 require access to tools and equipment that are not available in other classrooms. Labs are already offered every day of the week, spanning times from 7:45 am to 8:40 pm. Adding future lab sections would be very difficult without expanded facilities.</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</p>	<input checked="" type="checkbox"/> 1: Replacement Technology <input checked="" type="checkbox"/> 2: New Technology <input type="checkbox"/> 3: Software <input type="checkbox"/> 4: Other _____	<p>New Technology: (1) SolidWorks licenses for DST-126 for ENGR B24 in Spring '18: New course requires specific software to meet SLOs.</p> <p>Replacement Technology: (1) Monitors in SE-45: large/wide classroom makes viewing difficult on 52" displays. Overhead projector installation not possible because of room configuration. Larger displays would resolve issue (2) Laptops for SE-45 or new computer lab: several ENGR courses (B47, B19C, B20, B24)</p>

<p>success?</p>		<p>require use of software by instructor or student to illustrate key principles. Access is currently limited because of competition for MS computer labs with INDR and ARCH and currently only 12 functioning laptops (purchased 5+ years ago) are inadequate for this purpose (3) Projector in MS-9 needs upgrade: courses like ENGR B24 require high resolution display to properly illustrate software competency. Current projector resolution is inadequate to this task</p>
Resource Request	Discuss How Effective Request is for Student Success?	
<p>Other Equipment: <i>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.</i></p>	<p><input type="checkbox"/> 1: Replacement <input type="checkbox"/> 2: New <input type="checkbox"/> 3: Other _____</p>	<p>N/A</p>
<p>Budget: <i>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.)</i></p>		<p>N/A</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.

Rapid growth in enrollment has led to an increase from one to three full-time faculty members over the last two years. This allows increased course offerings and involvement with student organizations and outreach programs. However, if enrollment numbers continue to grow, current lab space will be inadequate and place a hard cap on the ENGR program. New construction with Measure J funding will hopefully alleviate this potential issue.