

Bakersfield College

Program Review – Annual Update 2015

I. Program Information:

Program Name: Engineering Technology

Program Type: 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 AS Industrial Technology is a composite of various programs in the EIT department, providing EIT students with an option to study a wide variety of industrial fields.

There are several Industrial Technology courses, along with a number of Associate of Science degrees with options within the disciplines that comprise the Industrial Technology area. The current courses that are identified as Industrial Technology (INDT) include: INDT B10 (Occupational Readiness), INDT B275 (Special Problems in Automotive), and INDT B271 (Special Problems in Welding). The Occupational Readiness course meets the educational planning requirements for certificates and degrees, as well as providing skill areas such as measurement, job-seeking skills, portfolio creation, industry awareness, math review, and other topics. The course uses a text call "High Performance Manufacturing", which is well-suited for our Industrial Technology students, and was created by the Manufacturing Skills Standards Council (MSSC), a highly regarded industry advocacy group. Our Special Problems courses provide an opportunity for students to pursue advanced-level experiences in the discipline, as well as organizing and managing projects, teaching and assisting other students in the discipline, and performing lab activities that the coursework does not have time to cover. These Special Problems courses are offered as no-load for the faculty that offer them, providing benefit to the students at no direct cost to the College.

Unlike other colleges that have technical coursework included in Industrial Technology, such as Industrial Maintenance at Porterville College, our discipline areas at Bakersfield College are well-developed, which allows technical coursework to be offered in the individual disciplines. However, the INDT B10 course was created to serve all Industrial Technology disciplines, without requiring each discipline to offer similar courses. This has proved cost-effective to the College, as the INDT B10 sections are always fully-enrolled.

Since CTE is an essential part of the Community College mission, and since student success, retention, completion, and placement are all vital components of the College mission as well, our Industrial Technology (INDT) courses are designed to advise students and develop skills for success among the students enrolled in these courses.

Program Mission Statement:

The EIT faculty and staff strive to offer effective, up to date and student centered instruction, being sensitive to the diversity of our students, their educational needs, and their career goals. We provide relevant course and lab work geared toward day and night students seeking careers in EIT related fields, also meeting the needs of students seeking training for career advancement or skills updating. We use a multi-dimensional approach in preparing our students not only for their specific career goals, but also provide activities that assist them with meeting their personal, academic, and intellectual goals. Our faculty actively pursues professional development, program/facilities improvement, and college/community involvement, seeking partnerships and collective efforts.

II. 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.

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)	Comments
1. Continue to coordinate with local industry through the work of advisory boards and other collaborative efforts.	<input checked="" 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	<input type="checkbox"/> Completed: _____ (Date) <input type="checkbox"/> Revised: _____ (Date) <input checked="" type="checkbox"/> Ongoing: <u>2015-16</u> (Date)	This is an ongoing process. All Industrial Technology disciplines use an Advisory Committee structure to help them determine equipment needs, curriculum changes, student placement, and other important issues. Individual program responses to this goal were addressed on those program’s APR’s.

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)	Anticipated Results
	<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	

III. Trend Data Analysis:

Highlight ***any significant changes*** in the following metrics and discuss what such changes mean to your program.

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

For the EIT department as a whole:

- Gender makeup continues to remain steady with approximately 13% of the students being female.
- Age and ethnic composition closely parallels that of the entire college.

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

For the EIT department as a whole:

- The 2014-15 unduplicated headcount increased upward by 6% to 1,635
- FTES increased to 610.5 in 2014-15, up from 565.3 in 2013-14.
- FTEF increased to 54.7 in 2014, up from 50.3 in 2013-14
- Last year FTES/FTEF productivity held steady at 11.2

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

For the EIT department as a whole:

The retention and success rates for the EIT department were 88% and 75%, respectively.

D. Changes in the achievement gap and disproportionate impact (Equity).

None.

E. Other program-specific data that reflects significant changes (*please specify or attach*). All Student Affairs and Administrative Services should respond.

IV. Program Assessment (focus on most recent year):

A. How did your outcomes assessment results inform your program planning? Use bullet points to organize your response.

- Each program individually assesses its own outcomes and plans accordingly.
- Seven associate degrees in Industrial Technology (General Option) have been awarded in the past five years.

B. How did your outcomes assessment results inform your resource requests? The results should support and justify resource requests.

None.

- C. How do course level student learning outcomes align with program learning outcomes? Instructional programs can combine questions C and D for one response (SLO/PLO/ILO).
- The student learning outcomes of various programs of the EIT department integrate the institutional learning objectives throughout the curriculum in the context of each industry applying the respective technologies.
- D. How do the program learning outcomes or Administrative Unit Outcomes align with Institutional Learning Outcomes? All Student Affairs and Administrative Services should respond.

Institutional Learning Outcomes:

Think: Think critically and evaluate sources and information for validity and usefulness.

Communicate: Communicate effectively in both written and oral forms.

Demonstrate: Demonstrate competency in a field of knowledge or with job-related skills.

Engage: Engage productively in all levels of society – interpersonal, community, the state and the nation, and the world.

- E. Describe *any significant changes* in your program's strengths since last year.
- As a department, Engineering and Industrial Technology has seen significant improvements, including the addition of new faculty members (expansion) in the welding and electronics programs. Individual changes among the disciplines are addressed in their APR's.
 - The College was selected to be one of the pilot Baccalaureate Degree Programs and will begin the BS in Industrial Automation program in Fall 2016. The BSIA will utilize various resources within the EIT department.
- F. Describe *any significant changes* in your program's weaknesses since last year.
- We continue to have, as a department, the same challenges with resources, staffing, equipment updating/replacement, the level of student academic preparation, and the effect of the cyclical nature of the economy on our funding and enrollment. However, we have improved in several ways, including addressing some equipment/technology issues through C6, STEM, and Chevron grant funding, embedded remediation/basic skills instruction through the C6 grant, and other initiatives on the campus, including the Critical Academic Skills workshops.
 - We have also benefited from an improved economy, particularly in the construction and technical/mechanical services areas.
 - An area of concern is the District's insistence that VTEA funding is directed to personnel, and equipment funding that is viable to maintaining current industry expectations is no longer supported through VTEA funding. We believe that continuing on this path will not provide the core indicator improvements that are needed to justify the level of VTEA funding that we currently receive.
- G. If applicable, describe any unplanned events that affected your program.

The sole full-time instructor for the manufacturing technology program was elected department chair in 2014, which has effected the offerings of courses in manufacturing technology, required for the AS Industrial Technology.

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

Human Resources and Professional Development:

1. 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.
None requested.
2. Professional Development:
 - a. 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.
In June one faculty member attended an injection molding workshop to gain knowledge of the plastics industry.
 - b. What professional development opportunities and contributions can your program make to the college in the future?
The faculty of this program could make presentations regarding the career opportunities and pathways that exist for students in the field of engineering technology.

A. Facilities:

1. How have facilities' maintenance, repair or updating affected your program in the past year as it relates to student success?
The condition of the manufacturing technology facilities is sufficient for the courses offered.
This question will be answered in each program's APR.
2. How will your Facilities Request for next year contribute to student success?
No new 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?
This question will be answered in each program's APR
2. How will your new or repurposed classroom, office technology and/or equipment request contribute to student success?

3. Discuss the effectiveness of technology used in your area to meet college strategic goals.

C. **Budget:** Explain how your budget justifications will contribute to increased student success for your program.

No budget increases are being requested at this time for the manufacturing technology program. The full-time and adjunct faculty are working to plan curriculum that efficiently adds value for the College and the students without additional funding.

VI. 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.

Industrial Technology as a “program” is very limited because we only provide three courses and one degree (Industrial Technology, General). However, Industrial Technology includes the following disciplines: Automotive, Construction, Electronics, Industrial Drawing, Manufacturing, Welding, and Woodworking. Each of these disciplines is a strong and fully-functional program.

We need to bring back the Water Technology (Water and Wastewater Treatment) program. This program was discontinued several years ago due to budget cuts, but is highly needed by industry. It is also a cost-effective program in terms on generating FTES. The adjunct instructors that teach the courses are currently working on Curricunet updating of course outlines.

During the 2014-15 the sole full-time instructor for the manufacturing program served his first year as department chair of Engineering and Industrial Technology. This position includes 60% release time. The EIT department has nine separate programs, each with individual needs – automotive technology, architecture, construction technology, electronics, engineering, industrial drawing, manufacturing technology, welding, and woodworking/cabinetmaking. Engineering is a transfer program while the others are classified as CTE programs with advisory committees. In addition, the college was selected in January 2015 for to offer one of the baccalaureate degree pilot programs. This degree program, a Bachelor of Science in Industrial Automation, will utilize EIT faculty and resources from the electronics and engineering program. In 2014-15 EIT offered a total of 173 class sections and generated 610.5 FTES. The 2014-15 FTEF was 54.7. Each of these statistics began an upward trend in 2012-13, which will most likely continue as interest in EIT programs increase along with increasing student populations.

VII. Forms Checklist (place a checkmark beside the forms listed below that are submitted as part of the Annual Update):

- Best Practices Form **(Required)**
- Curricular Review Form **(Instructional Programs Required)**
- Certificate Form **(CTE Programs Required)**

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| <input type="checkbox"/> Faculty Request Form | <input type="checkbox"/> Classified Request Form | <input type="checkbox"/> Budget Form |
| <input type="checkbox"/> Professional Development Form | <input type="checkbox"/> ISIT Form | <input type="checkbox"/> Facilities Form (Includes Equipment) |

Other: _____