

Bakersfield College

Program Review – Annual Update 2015

I. Program Information:

Program Name: Woodworking 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 Manufacturing Technology program at Bakersfield College provides training in the use of machine tools for production. Students learn the proper and safe use of lathes, milling machines, drilling machines, band saws, grinders, and measurement tools in cutting operations to produce precision parts from metal stock. Training is provided in the use of manually controlled machine tools as well as computer numerical control, or CNC, machine tools. The courses are designed to meet the training needs of local industry. The most significant local industries utilizing machinists include the petroleum, agriculture, and aerospace. Students enrolling in the Manufacturing Technology courses include students majoring in manufacturing, welding, electronics, and engineering.

There are three course under the title "Manufacturing Technology": MFGT B1AB "Machine Tool Processes", MFGT B2 "CNC Lathe Programming", and MFGT B3 "CNC Milling Machine Programming". Student can find gainful employment after (or even while) taking any one of these courses, whether or not they complete the entire degree or certificate of achievement.

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 type="checkbox"/> 1: Student Learning <input type="checkbox"/> 2: Student Progression and Completion <input type="checkbox"/> 3: Facilities <input checked="" type="checkbox"/> 4: Oversight and Accountability <input checked="" type="checkbox"/> 5: Leadership and Engagement	<input type="checkbox"/> Completed: _____ (Date) <input type="checkbox"/> Revised: _____ (Date) <input checked="" type="checkbox"/> Ongoing: _____ (Date)	An adjunct instructor was hired in August 2015 to divide the teaching load for the lead manufacturing instructor who became department chair in July 2014. This has helped reach out to the local community. A new dual-enrollment high school course will help with partnership efforts.
2. Continue to address gaps in CTE core indicators.	<input type="checkbox"/> 1: Student Learning <input type="checkbox"/> 2: Student Progression and Completion <input type="checkbox"/> 3: Facilities <input checked="" type="checkbox"/> 4: Oversight and Accountability <input type="checkbox"/> 5: Leadership and Engagement	<input checked="" type="checkbox"/> Completed: _____ (Date) <input type="checkbox"/> Revised: _____ (Date) <input checked="" type="checkbox"/> Ongoing: <u>2015-16</u> (Date)	This is an ongoing goal, however, it is a long-term goal being focused on by the Occupational Education Task Force. This goal will be replaced with the new goal listed in section II B below.

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
Update course SLO’s and program learning outcomes to integrate with ILO’s	<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	Updating program outcomes to be specific and measureable to enable program planning based on assessment results.

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).

- Gender makeup continues to remain steady with approximately 6% 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).

The 2014-15 unduplicated headcount increased upward by 15%. Hopefully this is the beginning of a trend.

Four class sections were offered in 2014-15.

In 2014-15, as in 2013-14 only four total sections of manufacturing technology courses were offered.

Last year FTES/FTEF productivity was 11.1, a slight increase of .2 over the previous year, but remaining steady.

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

The retention and success rates for manufacturing technology were 83% and 79%, respectively. These were very close to the college-wide retention rate of 86% and success rate of 69%. Over the past five years these rates for the manufacturing technology are strong. Retention has been within 3-6 percentage points of the college-wide retention rate. Last year manufacturing students exceeded the college-wide success rate by ten percentage points.

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

The retention rate for African American, Hispanic, and white students were fairly close to the college-wide rates for each ethnicity. The success rates for each group exceeded the college-wide rate. Most notably, African American students surpassed the college-wide rate by 28%.

	MFGT Retention	BC Retention	Δ Retention	MFGT Success	BC Success	Δ Success
African American	76%	74%	+2%	71%	49%	+28%
Hispanic	81%	85%	-4%	77%	65%	+12%
White	84%	87%	-3%	80%	74%	+6%

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 of the three manufacturing technology courses has five general (nonspecific) SLO's.
- The manufacturing technology program has three general PLO's, not currently aligned with the ILO's
- In spring 2015 the campus-wide outcomes assessment procedure was updated.
- It was determined that current manufacturing SLO's and PLO's are too broad and difficult to assess to determine specific, actionable information.
- The current SLO's and PLO's will be revised in 2015-16 so that they can inform program planning.

- B. How did your outcomes assessment results inform your resource requests? The results should support and justify resource requests.
No resources being requested.
- 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 SLO's will be updated to align with the following new PLO's:
- Students will analyze manufacturing problems through the use of industry standard reference works.
 - Students will communicate effectively through the practice of basic technical writing, industrial drawing practices, and teamwork.
 - Students will demonstrate the knowledge, skill, and ability to design for, and manufacture parts by, metalworking processes.
 - Students will develop understand how manufacturing technology impacts society.
- 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.
No changes to report.
- F. Describe *any significant changes* in your program's weaknesses since last year.
No changes to report.
- G. If applicable, describe any unplanned events that affected your program.
The lead faculty member for the manufacturing technology program is chair of the EIT department and was closely involved with development of the proposal and curriculum for the upcoming baccalaureate degree program.

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.

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.
None.
- 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 that exist for students in the field of manufacturing and machine tool 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.
2. How will your Facilities Request for next year contribute to student success?
No new facilities requested.

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?
None.
2. How will your new or repurposed classroom, office technology and/or equipment request contribute to student success?
The machine tool lab (IT 7) houses a Mori Seiki CNC lathe which is used in the MFGT B2 class. The machine was purchased by Bakersfield College in 1981 – the machine has an internal memory of 8 kilobytes, for reference. Students would benefit from the replacement of this machine with state-of-the-art technology by gaining first-hand experience with the capabilities of new machinery. While the older machine is functional it is limited in its pedagogical flexibility.
3. Discuss the effectiveness of technology used in your area to meet college strategic goals.
The use of computers is essential for the CNC (computer numerical control) programming classes, MFGT B2 and B3. PC's are used for classroom programming exercises along with specialized training simulators produced by Haas Automation.

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.

An adjunct instructor was hired to help teach the MFGT B1AB classes during the 2014-15. This adjunct instructor is highly qualified, having 30 year experience in the manufacturing industry as a machinist, shop owner, and quality assurance manager. His expertise quickly became a valuable asset to the manufacturing program. Student response has been very positive to his industrial and technical insight.

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.

Although rewarding, the duties as chair of EIT are focused on the operations of the department – within each program and the department as a whole. It has been challenging and often difficult to devote the attention necessary to foster growth in the manufacturing technology program. It would be beneficial to the program to place it under the purview of the welding program, as both programs serve the needs of local metal fabrication industry. Welding and machining are different facets of metalworking and have a natural affinity. The welding program requires the machining course (MFGT B1AB) and the manufacturing program requires several welding courses.

The welding program review is including an initial suggestion that its program be formed into a department separate from EIT. This is proposition supported by the manufacturing technology faculty, which includes the EIT department chair. A welding/manufacturing department would have greater flexibility to grow in new strategic directions. As a result, the manufacturing technology program could again have the necessary full-time faculty to grow the program.

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: _____