Bakersfield College 2018-2019
Comprehensive Program Review

Program Name: Industrial Drawing / CAD

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

Program Mission Statement:

The Engineering and Industrial Technology (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 full and part time 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.

Describe how the program supports the Bakersfield College Mission:

Career Technical Education (CTE) is one of the stated missions of the California Community College system. All types of construction, manufacturing, production, and engineering use drawings to communicate ideas through graphic communication. The Industrial Drawing program at Bakersfield College introduces the student to common conventions in the field and develops indispensable skills in:
- basic sketching and drafting techniques used every day by all levels drafters, designers, and engineers
- creating graphic solutions appropriate for the type of work being performed
- employing principles of design with an understanding of manufacturing processes
- increasing productivity through effective use of computer aided drafting (CAD)

Some classes are industry specific and give advanced instruction in 3D modeling, geographic information systems (GIS), electrical design, and piping drafting. Industrial drawing classes benefit students pursuing careers in engineering, architecture, and industrial technology. Students who receive training in our classes are prepared to enter various fields of employment, including AutoCAD drafter/designer, engineering technician, GIS technician, civil drafter, piping drafter, electrical circuits drafter, and 3D modeling designer. Bakersfield College, as part of the California Community College system, provides CTE, transfer, and basic skills coursework. Our program successfully serves the CTE statewide goal for our discipline. In addition, we have participated in several of the strategic goals and initiatives of the college, including student success and fiscal sustainability through our participation in the STEM program and through sizeable grants from Chevron. Our facilities and equipment are exemplary among similar programs in the state, and as such, they have contributed both to student success and a positive example of Bakersfield College's commitment to relevant technology and high-wage, high-growth occupations within our service area.

Instructional Programs only:

The Industrial Drawing program at Bakersfield College currently offers an AS degree, a certificate of achievement, and a job skills certificate.

There is a Job Skills Certificate offered that is composed of INDR 12, INDR 20a, and INDR 20b. This certificate is recognized by our local community and is one of the goals of most of our students.

The Certificate of Achievement is comprised of the technical courses necessary for completion of the AS degree. The target population for this certificate are students who desire another level of certification beyond the job skills certificate, but do not desire the AS degree.

The Industrial Drawing program does not offer an ADT

Progress on Program Goals, Future Goals, and Action Plans:

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: Coordinate with local industry through the work of advisory boards and other collaborative efforts.

> **List the institutional goals from the Bakersfield College Strategic Plan that will be advanced upon completion of this goal?**
> This goal affects all of the institutional goals of Student Learning, Student Progression and Completion, Facilities, Leadership and Engagement.

> **Progress on goal achievement:**
> Through our efforts in this area, we have identified new faculty to teach as adjunct, created new assignments, and incorporated new technology in the classroom (such as 3D scanning VR goggles). This is an ongoing goal that will be continued in the future.

> **Status Update – Action Plan and any link to Resource Requests:**
> This is an ongoing goal that will be continued in the future. Resource requests will include additional funding for training, supplies, and facilities.

Program Goal: Address gaps in core indicators.

> **List the institutional goals from the Bakersfield College Strategic Plan that will be advanced upon completion of this goal?**
> This goal affects the institutional goals Student Learning and Student Progression and Completion.

> **Progress on goal achievement:**
> Many of the performance rate deficiencies seem to stem from the low numbers counted. For example, in Core 4 Employment, the INDR program does not meet the goal in three areas: Economically disadvantaged, LEP, and Single Parent. The economically disadvantaged misses the mark by less than two percent, but only has a total of 15 students. The LEP and single parent categories have 2 and 3 students respectively. In order to address the gaps, our faculty will continue to pursue pedagogical and technological tools (such as Canvas) to help students succeed. INDR is also committed to outreach activities in the local high schools (such as dual enrollment), targeting the NT populations.

> **Status Update – Action Plan and link to Resource Requests**

B. 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.
   1. **Future Program Goal:**

Implement a series of entry and exit assessments (including tests, interviews, or surveys) to help evaluate student preparedness in the following areas:
* Base knowledge for new students (introductory course only)
* Retention from prerequisite courses
* Identification of knowledge gaps or misunderstanding of concepts

List the institutional goals from the Bakersfield College Strategic Plan that will be advanced upon completion of this goal?
This goal affects the institutional goals of Student Learning, Student Progression and Completion, Facilities, and Leadership and Engagement.

Action plan:
Beginning with the introductory course of INDR B12, we will create pre- and post-assessments that will be given to all students. This information will be used to help faculty and students identify strengths and weaknesses, as well as identify SLO attainment.

Lead person for this goal: Klint Rigby

2. **Future Program Goal:** Replace the computers in MS9 and MS10

List the institutional goals from the Bakersfield College Strategic Plan that will be advanced upon completion of this goal?
This goal addresses the institutional goals of student learning, student progression and completion, and facilities

Action plan:
Replace all of the computers in MS9 and MS10 with new computers. This is a practice that has occurred every three years in the past. As time passes the computer programs continue to demand more from the computers. Replacing the computers on a regular basis helps ensure that students have access to equipment that is capable of meeting the demands of the software. Computers in industry are replaced on similar schedules.
In the past month we have had two computers fail because of hard drive issues. Our computer technician, Zachary Wharton, indicated that it would be a good time to replace these computers before more of them fail due to the high demands placed on them.

3. **Lead person for this goal:**
Klint Rigby

3 Year Program Analysis: (All programs will answer the following questions unless otherwise indicated)
Take a look at your trend data. Provide an analysis of program data throughout the last three years (all programs should have some form of data that is used to look at changes over time) and report:
1. There have been no significant changes in student demographics over the last three years.
2. There have been no significant changes in enrollment in the past three years.
3. There have been no significant changes in achievement gap or disproportionate impact. It is difficult to effectively assess changes in these areas because of low numbers of students enrolled who reflect these demographics.
4. Our area does not currently offer distance or online courses.
5. There were no unplanned events that negatively affected our program.
6. The number of degrees and certificates have remained fairly constant over the past three years. We expect the number of CAs to increase as students over the next three years because the CA is now offered in the catalog.

7. We would like to begin to offer classes in the new Southwest campus located on Stockdale Highway. This would be important to our program because it would result in additional classroom space (we are currently limited in the number of classes we may offer because of limited classroom space) and increased enrollment (due to the introduction of a new location).
8. Our program is working with all of the other programs in the ITT pathway to ensure student success. Though it is still in its infancy, we expect to participate in all aspects of the guided pathways program.
9. Industrial Drawing currently offers dual enrollment at two local high schools and has worked with faculty at both schools to ensure rigor and success.
10. List degrees and certificates awarded (three-year trend data for each degree and certificate awarded). Include targets (goal numbers) for the next three years.

Full Name of Degree or Certificate	2015- 2016	2016- 2017	2017- 2018	2018- 2019	2019- 2020	2020- 2021
Industrial Drawing / CAD Job Skills Certificate	29	38	39	40	40	40
Industrial Drawing Certificate of Achievement (new this year)	n/a	n/a	n/a	12	25	25
Industrial Drawing AS degree	9	4	5	10	15	15
Industrial Drawing AA degree (discontinued)	4	5	2	0	0	0

Analysis of Received Resources from Previous Cycle
Discuss the type of resources you received and their Impact on program effectiveness?
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.
1: Space Allocation   n/a
2: Renovation   n/a
3: Furniture   n/a
4: Other   n/a
5: Beyond Routine Maintenance   n/a

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?
1: Replacement Technology   Our program shares new scanners with the architecture program. This technology has allowed our students to digitize information and include it into the classroom experience.
2: New Technology   n/a
3: Software   Our program continues to offer training on the latest versions of all software. This allows Bakersfield College to be a recognized leader for training in the community. It is important for BC to continue this trend.
4: Other_____

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.

Conclusions:

It is time to replace the computers in MS9 and MS10 with new computers.

Each year we send at least one faculty to industry-recognized training, such as Autodesk University and SolidWorks World. Both conferences are sources for leading industry training and networking. Presenters and attendees converge for three days of intense training and certification opportunities. Attendance at Autodesk University and SolidWorks World helps keep our faculty aware of the latest trends and activity in the industry. We also actively seek out training and certification opportunities that will benefit our community. Our advisory committee is aware of this commitment and appreciates our attention to maintaining our skills.

Our program continues to be limited in the amount of space we have to teach classes. Our labs are in use every day (including Fridays and Saturdays) and offering additional classes is getting difficult. We would like to begin offering classes at the new Southwest Campus, but that has been limited by time constraints and funding.

We are in need of a part-time student employee to assist us with operating the creative design center, maintaining the machines in the center, and ordering and maintaining supplies for this area. We often share this space with Engineering and Architecture, which places a tremendous load on our faculty to operate and maintain the creative design center.