

Bakersfield College

Comprehensive Program Review

I. Program Information:

Program Name: Automotive 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 Automotive Technology program at Bakersfield College provides training for automotive technicians, smog test technicians, engine repair technicians, engine machinists, transmissions repair technicians, alignments specialists, suspension specialists, brake systems specialists, tire service technicians, air conditioning technicians, electrical diagnostic specialists, onsite/field repair technicians, heavy duty equipment technicians, service writers and consultants, parts sales persons and more. The Automotive Department serves the Agriculture, Oilfield and Commercial Industries in Kern County as well as its vast Automotive Industry.

The Bakersfield College Automotive Department, as part of the California Community College system, provides CTE, transfer, and basic skills training to an average of 250 students each year. 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 through our participation in the internship and job placement activities, and fiscal sustainability through our participation in the VTEA program and through donations the local new car dealership association and members of our advisory board. Our program is exemplary among similar programs in the state, and as such, the Automotive Department has 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.

Program Mission Statement:

The Automotive Technology faculty strives 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 automotive 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.

Instructional Programs only:

A. List the degrees and Certificates of Achievement the program offers

B. If your program offers both an A.A. and an A.S. degree in the same subject, please explain the rationale for offering both.

C. If your program offers a local degree in addition to the ADT degree, please explain the rationale for offering both.

II. 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 goals, please duplicate this section.

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
<p><i>1. Coordinate with local industry through the work of advisory boards and other collaborative efforts.</i></p> <p><i>Continued goal from last year. Changes in curriculum were either made or proposed in response to feedback by advisors. Evaluation of the change will take place over the next several years</i></p>	<p><input checked="" type="checkbox"/> 1: Student Learning <input checked="" type="checkbox"/> 2: Student Progression and Completion <input checked="" type="checkbox"/> 3: Facilities <input checked="" 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: _____ (Date)</p>	<p><i>The Automotive Department is in constant communication with our industry partners to assess how we can best prepare our students for employment in our industry. In addition to this, over the past year we have worked local employers to create job placement opportunities for our graduating students. This continuous collaborative effort insures that our department is always in line with the needs of our industry and providing the best possible education and opportunities to our students.</i></p>
<p><i>2. Continue to address gaps in core indicators. [This is continued from last year – especially in terms of nontraditional student (female) enrollment.</i></p>	<p><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</p>	<p><input type="checkbox"/> Completed: _____ (Date) <input type="checkbox"/> Revised: _____ (Date) <input checked="" type="checkbox"/> Ongoing: _____ (Date)</p>	<p><i>In our area, females are the non-traditional student. Through outreach events, such as host an all-female tour of the Bakersfield College EIT department for all local high schools, we have seen consistent growth in enrollment for our non-traditional students.</i></p>

			<p><i>Female enrollment remains strong at 10%, a vast improvement from years past. We have also seen a steady improvement in the success and retention of our female students. Success rates are 72% and retention is at 82% both these statistics are above the college wide outcomes and are in line with the male Automotive students.</i></p>
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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.

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
<p><i>1. Restructure classes degrees and certificates to improve pathways, enrollment, retention, competition & success.</i></p>	<p><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 checked="" type="checkbox"/> 5: Leadership and Engagement</p>	<p><i>The Automotive Faculty has been working diligently to restructure every one of the Automotive classes, certificates and degrees to better serve the needs of our students and industry. This restructure provides the students with a much more streamlined, direct path through the program while offering multiple exit points to serve individual students needs. It will also allow for increased headcount in multiple</i></p>	<p><i>Fall 2016</i></p>	<p><i>Justin Flint Vic Posey</i></p>

		<p><i>class offerings that the current model does not allow. Additionally, the new design aligns very well with Rio Hondo college which now offers a bachelors degree In Automotive Technology. We intend to articulate with them to provide a simple transfer opportunity for our students. We believe an immediate increase in head count; degree and certificate issuance will be seen. Please see attached documentation.</i></p>		
<p><i>2. High light science, technology, engineering and mathematics (STEM) topics throughout the automotive curriculum, in the classroom and lab, to broaden our students understanding.</i></p>	<p> <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 checked="" type="checkbox"/> 5: Leadership and Engagement </p>	<p><i>In the spring of 2015 the automotive department hosted a guest speaker addressing STEM topics and teaching techniques for automotive students. The automotive faculty saw examples of teaching techniques that high light the many ways STEM is represented in the automotive curriculum. The Automotive faculty feel strongly that this needs to be implemented into our daily lesson plans and lab activities. We seek to apply what we've learned and acquire new methods of teaching the automotive curriculum in ways that help our students' understanding of science, technology, engineering and mathematics.</i></p>	<p><i>On Going</i></p>	<p><i>All Automotive Faculty</i></p>

III. Trend Data Analysis:

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

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

No significant changes.

- B. Changes in enrollment (headcount, sections, course enrollment, and productivity).
Headcount (285), enrollment (377) and productivity (11.2) improved slightly with two less sections (18) during the 2014-15 period.
- C. Changes in achievement gap and disproportionate impact.
No significant changes.
- D. Success and retention for face-to-face as well as online/distance courses.
Success and Retention rates are up slightly this period, at 72% and 89% respectfully, and continue to outperform the college wide statistics.
- E. Degrees and certificates awarded (three-year trend data for each degree and/or certificate awarded).
You will see in the chart below that degree issuance almost doubled this period while certificate issuance remains strong. The Automotive Department continues to issue a large percentage of the EIT degrees and certificates.
- F. Other program-specific data (please specify or attach).
 - a) *100% of Automotive students earn their SP2 safety certificates while attending BC. This is a commercial safety program recognized by several industries, including automotive, agricultural, oilfield and industrial.*
 - b) *In addition to certificates and degrees we offer students training for several California State and National automotive industry certifications. Through the Auto B61 course students are given the opportunity to earn two different state certifications for Level 1 and Level 2 Training with certificates issued by the Bureau of Automotive Repair. In the fall of 2014 75% of the students enrolled in the course obtained the Level 1 training certificate and 55% of students obtained the Level 2 training certificate. Through follow up calls with students it was learned that 55% students were able to obtain their California State Smog Inspectors License due to the technical training provided by the faculty in the automotive program at Bakersfield College.*
 - c) *In the Auto B59 air conditioning course nearly 95% of the automotive students will obtain their nationally recognized MACS certification by the end of the semester.*
 - d) *Approximately 30% of BC Automotive students earn their ASE industry certificates while they are still enrolled at BC. The remaining students earn their ASE certificates the traditional way, after they have entered the workforce.*
- G. 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	2011- 2012	2012- 2013	2013- 2014	2014- 2015	2015- 2016	2016- 2017
A.S. Industrial Technology, Automotive Option	3	5	4	9	Goal 12	Goal 15

Automotive Brake & Wheel Alignment	9	10	4	12	Goal 12	Goal 15
Automotive Engine Overhaul	16	20	10	9	Goal 12	Goal 15
Automotive Powertrain	14	4	7	7	Goal 12	Goal 15
Automotive Tune-up	11	10	10	11	Goal 12	Goal 15
Automotive Management	Not offered	3	2	2	Goal 6	Goal 10
Automotive HVAC	5	3	11	5	Goal 8	Goal 12
Basic & Advanced Clean Air Car Course	3	5	5	3	Goal 6	Goal 10

IV. Program Assessment:

- A. List your Program Learning Outcomes (PLOs)/Administrative Unit Outcomes (AUOs).
- #1. Students will demonstrate proficiency in technical skills and safety principles required for industrial employment.*
- #2. Students will demonstrate their ability to assess, evaluate and solve problems common to automotive, industrial, and agricultural industries.*
- #3. Students will demonstrate a thorough understanding of the core material required for transfer to a four year university or certification in the department programs.*
- B. How did your outcomes assessment results during the past three years inform your program planning?
- Automotive students complete many Lab Tasks and classroom assignments through the course of the semester which allow the professor to assess the understanding and attainment of the information by each student. If the student does not exhibit proficiency in each task, the professor can quickly and accurately analyze the situation which allows them to guide the student until proficiency is achieved. Results from the overall class proficiency are analyzed at the conclusion of each task sheet to determine if the success rate is acceptable and adjustments are implemented immediately if necessary. Our Advisory Committee consistently confirms that we are keeping up with the changing technical demands of our local employers.*
- C. How did your outcomes assessment results during the past three years inform your resource requests?
- Each professor in Automotive Technology has implemented information technology resources into the learning environment. In addition to using the most current tooling and equipment from our industry, we have utilized online training, computer simulation and animation to convey the subject matter in a format that is embraced by our students. We have also put great effort into streamlining class offerings and meeting with our students one on one to help them achieve their goals more quickly. This has led to improving the pathway to the degree, certificates and ultimately employment in our industry. All of this is a result of constant communication with and evaluation of our students. In order to continue this success we will continue to need financial support from the district to maintain the instructional methods, technical training, equipment, and automotive industry technology and resources. The ISIT form references short throw projectors, document camera,*

and printer that will be utilized to improve the students learning environment. ISIT also references technology and equipment namely, a welder, transmissions, and factory scan tools that will be used to maintain up to date and current technical training for students.

- D. Describe how the program monitors and evaluates its effectiveness.

The Automotive faculty monitors degree and certificate issuance regularly to ensure completion. Each Automotive faculty also maintains professional relationships with employers in our area. This allows constant assessment of the quality of student that we are sending into our local industry. It also provides constant, immediate feedback on what we are teaching and how we are teaching while providing a real time analysis of our effectiveness. In addition to that we also will maintain contact with former students via email and phone calls. Through the student contact we learn of certifications and jobs that they have obtained after their training at Bakersfield College.

- E. Describe how the program engages all unit members in the self-evaluation dialog and process.

The Automotive faculty is in constant communication with regard to curriculum, facilities and serving or students. There is consistent dialog regarding pedagogy, lab tasks, test questions, use of technology, etc as well as performance outcomes. We see our individual efforts as contributing collectively to the overall goal of providing our students with the most thorough automotive education to best prepare them to gain employment in the vast types of job opportunities in our area.

- F. Provide recent data on the measurement of the PLOs/AUS., as well as a brief summary of findings.

100% of automotive students demonstrate proficiency in technical skills and safety principles required for industrial employment. This is assessed in every class. 72% of Automotive students demonstrate their ability to assess evaluate and solve problems common to automotive, industrial, and agricultural industries. This is shown in the success statistics from 2014-15. 72% of Automotive students demonstrate a thorough understanding of the core material required for transfer to a four year university or certification in the department programs. This is shown in the success statistics from 2014-15.

- G. What have the program's PLO's/AUO's revealed or confirmed in the past three years?

The program PLO's continue to prove that the majority of our students do not receive any of their automotive training at the high school level which demands that the BC Automotive department strive to offer a thorough, well balanced education for our students while continuing to look for ways to expand our training opportunities to topics not currently being covered.

- H. *If applicable*, list other information, data feedback or metrics to assess the program's effectiveness (e.g., surveys, job placement, transfer rates, output measurements).

- I. 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).

While the Program Learning Outcomes encompass the entire Automotive Department, the student learning outcomes are more specific for each area in our industry. The Automotive Program learning outcomes align very closely with "Pursue knowledge and evaluate its

consequences” and “Demonstrate knowledge and abilities in a chosen area of study” from the Institutional Learning Outcomes. Our students are required to think critically, abstractly, and logically to evaluate and solve problems daily. They continuously integrate new information to formulate principles and theories and display openness to different opinions. They must share the desire for intellectual creativity and acquisition of knowledge to achieve each assigned task. Through the use of lab task sheets they demonstrate an understanding of resources and procedures of a field and the ability to use them as well as demonstrate ability to use current technology to acquire, organize, and analyze information appropriately.

J. How do the program learning outcomes or Administrative Unit Outcomes align with Institutional Learning Outcomes?
Very well, thank you. (only kidding. See information in I.)

K. How did your program address Equity, specifically referencing the achievement gap and disproportionate impact, over this comprehensive cycle?

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.

L. Discuss your program’s strengths.

The Automotive program is consistently one the top performing EIT departments in degree and certificate issuance. The Automotive department has higher Retention and Success rates that the college wide average. Our students report to us that they easily gain industry certifications and employment after completing our program. Our advisory committee is the largest on campus and regularly reports to us that we are providing them with quality, entry level employees.

M. Discuss your program’s weaknesses.

The Automotive department seeks to increase enrollment, degree and certificate issuance. We believe this will be accomplished when we implement a complete program restructure in the fall of 2016. Please see details attached titled Automotive Restructure.

The Automotive program also seeks to expand its training to areas not currently offered such as light duty diesel, heavy duty diesel, alternative fuels as well as paint and body repair. The program restructure will allow for this as well.

It is a challenge for the automotive faculty to train students to work on modern vehicles when the vehicles in the fleet are 15 -20 years old.

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

NA

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>

A. 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.

The Automotive Department is not requesting any positions at this time, however, in the next two years it will be necessary to replace an existing professor and add an additional full time professor to accommodate increased enrollment and add additional classes required by our local industry.

There will also be a need to replace the existing EIT department Lab Technician when Tom Moenke retires in the next few years. All EIT programs rely on Tom to keep their sophisticated lab equipment and machinery fully operational to allow for complete student training.

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.

Bakersfield College Automotive Department is a NACAT certified training facility which makes us eligible for support directly from all vehicle manufacturers. NACAT requires that all instructors at NACAT certified schools attend a minimum of 20 hours of professional training each year. The professional development received by each instructor keeps us abreast of current industry issues and enables us to more effectively train our students for current industry working conditions. It also provides invaluable networking opportunities which allow us to be better connected to and supported by our industry partners.

Mr. Flint attended update training related to smog program ensuring that his training would remain current given the recent changes to the smog program. Mr. Johnson attended a transmission rebuilders seminar in Las Vegas allowing him to remain maintain current and up-to-date standards for this transmission rebuilding class. Mr. Posey went to the SEMA show in Las Vegas to stay abreast with current technology, parts, and equipment used in engine machining applications. An addition goal for the training is to foster relationships with other industry contacts that can support our program.

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

We intend to host automotive industry technical training from outside vendors at Bakersfield College. In the past, technical training has been hosted at the college but at the current time it is not cost effective for training groups to use Bakersfield College as a training venue. Training events are being held in Bakersfield but not at Bakersfield College. We would love to see that change for the better. If Bakersfield College were to incentivize training groups to bring the venue back to BC this would provide numerous opportunities and benefits. We believe that this is a very valuable resource that would benefit our automotive program, our students and Bakersfield College as a whole.

The Automotive faculty would love to take the opportunity to talk about the Science Technology Engineering Math (STEM) program and in a format presented as Stem 101. Addressing topics such as: what is STEM, science, technology, engineering, and math. We would like to stress to our colleagues the importance of accurately conveying this information to our students along with its relevance to the practical skills that we are teaching our students. Sometimes when you do not have a framework for the practicality or usefulness of the information that you are learning it hinders the retention of that information.

Please see attached form Professional Development.

B. Facilities:

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

All of the lab equipment is maintained, repaired and updated by the Automotive Faculty and the EIT Lab Technician, Tom Moenke. Basic facility repairs such as heating, cooling and lighting have been addressed, and we are very grateful to our maintenance staff, but the majority of the facilities requests from last year's form have not been addressed as of yet.

- *Various signage needs to be installed throughout IT3&4 as well as AT1&2 as noted by SISC Risk Management Services in their recent inspection.*
- *The restrooms in AT1&2 need to be changed to accommodate both male & female students.*
- *The evaporative coolers cause the very expensive equipment in AT2 rust creating reliability, accuracy and durability issues.*
- *The retaining/building wall in the AT2 Lab is detaining due to moisture seeping through the wall from the elevated earth on the other side. The ground needs to be dig away from the wall & a new moisture barrier installed. Excess watering needs to be eliminated & increased drainage created on the other side to prevent future problems.*
- *Cooling for the IT3 Lab needs to be improved. There is only one cooler servicing that area.*
- *The controls for a bench grinder in AT2 need to be moved from the wall behind the grinder to the front of the grinder for safe use.*
- *The storage room that serves the second floor classroom in IT3 has doors that open to the lab below. A safer barrier and appropriate signage needs to be added.*

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

The requests range from safety concerns to the preservation of current instructional resources. A safe working environment as well as operational equipment is a must to effectively instruct our students.

Please see attached form.

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?

Many of the computers in our classrooms and labs are outdated but functional. Having slower computes does affect our face to face time with students since it takes the computer longer to process information thus using up the students time while completing an assignment or looking up information. In the automotive industry we use extensive databases that store comprehensive information about every vehicle including every year, make and model of passenger vehicle from 1976 to current vehicles.

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

Newer technology will improve efficiency in classroom and lab activities which will improve the learning environment. It will also enable the use of larger databases and more effective software commonly used in our industry.

3. Discuss the effectiveness of technology used in your area to meet college strategic goals.
 - a. *College goal of training students for technical careers applies to our program. Currently there are 200+ automotive openings in our local market every year.*

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

VII. Faculty and Staff Engagement:

- A. Discuss how program members have engaged in institutional efforts such as college committees, presentations, and departmental activities.
 - a. *Dan Johnson is supporting the students in the starting of a new Automotive Club.*
 - b. *Vic Posey is currently serving on the Equivalency Committee and the Facilities Committee.*
 - c. *All Automotive Faculty regularly attend the Occupational Readiness Committee meetings.*
 - d. *Justin Flint is planning a FLEX activity to illustrate ways to connect STEM topics in the classroom.*
 - e. *All Automotive Faculty present and participate in our advisory committee.*
 - f. *All Automotive Faculty participate in outreach to High school students.*
 - g. *All Automotive Faculty have and will continue to host career days with high schools students and current students at BC.*
- B. Instruction Only: Discuss how adjunct faculty members are included in departmental training, discussions and decision-making.
 - a. *The adjunct faculty are asked for input from when making course or program changes that will affect courses that are taught by adjunct. Adjunct faculty members are also involved with our advisory committee meetings with industry.*

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.

1. *Streamlining the Automotive classes available to our students will continue to increase persistence and completion rates.*
2. *The Automotive Department is operating at maximum capacity with the current faculty. While there is a potential for growth in the program with new subject offerings, such as diesel and hybrid technology, the addition of new faculty positions would be necessary to accommodate this. Instead the focus of the current faculty is to maintain success and retention rates which are higher than the college wide statistic.*
3. *Students continue to come to our classes under-prepared academically and challenged by our rigorous coursework in this program. We need to adapt our teaching strategies and add teaching resources, such as informational technology, to promote continued growth in retention and success rates of our students.*

4. Although growth of sections has been limited in the recent past due to budget cuts, we anticipate growth in sections and FTES from this year on. Course sections have typically been full and waitlisted in our program.
5. It will continue to be a challenge to meet the expectations of industry (greater breadth of knowledge required for the average technical employee) while meeting the expectations of our College program (productivity, number of sections allowed and scheduling issues) and the limitations of our facilities for expansion.
6. Employers are more willing than ever to offer internships, donations of equipment and money, expertise, and entry-level employment. This is a direct result of the efforts we have made in connecting our industry sectors with our college.

IX. 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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- Faculty Request Form
 - Classified Request Form
 - Budget Form
 - Professional Development Form
 - ISIT Form
 - Facilities Form (Includes Equipment)
 - Other: _____