

Bakersfield College

Program Review – Annual Update

Program Name: [Computer Science \(AS-T\)](#)

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 [Computer Science \(AS-T\) Program](#), as an integral part of Bakersfield College, supports the mission, core values and vision of the College by providing high quality education to our socially and ethnically diverse students. The [Computer Science \(AS-T\) Program](#) meets the College's core mission areas by providing career and technical education and transfer courses. The program supports career and technical education by offering courses, and providing training, that are highly sought after by employers. By design, the AS-T degree allows students to seamlessly transfer to a CSU Computer Science program without the need to take additional lower division courses.

Program Mission Statement:

The Associate in Science in Computer Science for Transfer degree (AS-T in Computer Science) is designed to provide students a clear transfer pathway to the CSU computer science major and completion of the computer science baccalaureate degree, to grant guaranteed admission to a CSU to a similar major, with junior standing, and the ability to complete their remaining requirements within 60 semester or 90 quarter units. Students will take courses in computer science and related fields that will provide the theoretical and practical knowledge necessary to work in a variety of computer related fields such as Software Engineering, Computer Engineering, Computer Systems Analysis, Network Engineering, Cloud Computing, Mobile Application Development, Computer Support, Computer Information Systems, Database Administration, Network Security, and Web Development.

Instructional Programs only:

- A. List the degrees and Certificates of Achievement the program offers [AS-T](#)
- 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 and the difference between the two.
- C. If your program offers a local degree in addition to the ADT degree, please explain the rationale for offering both.

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
1. We plan to discuss and coordinate assessments and best practices.	<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	<input type="checkbox"/> Completed: _____ (Date) <input type="checkbox"/> Revised: _____ (Date) <input checked="" type="checkbox"/> Ongoing: _____ (Date)	Still working on this. With the addition of a third instructor that is teaching the CS ADT courses, this goal is even more important.
2.	<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	<input type="checkbox"/> Completed: _____ (Date) <input type="checkbox"/> Revised: _____ (Date) <input type="checkbox"/> Ongoing: _____ (Date)	

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
Want to ensure that students who graduate from the Computer Science (AS-T) program can really be accepted into the local CSU, as advertised.	<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	Two of our faculty have been invited to participate in a workshop designed to build a stronger relation between us and the relevant departments at CSUB.
For COMP B13, need to change "Recommended: Successful completion of COMP B11" to "Required: Successful completion of COMP B11"	<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	Because of the transition from Curricunet to eLumen, this task has not been possible. eLumen is still not available, because of delays, but I understand there might be a way around it, using paper forms.

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.

In the beginning programming class, COMP B11, students take quizzes that are designed to induce them to read the textbook and also designed to create some continuity between classes. The quizzes are taken online and are composed of multiple-choice questions, to which the students have access before the quiz, so that they may prepare for them. I am currently using Canvas quiz activity to implement the quizzes, which gives me immediate feedback so that I can use the quiz as a formative assessment tool, in addition to using it as a summative assessment tool. I am able to do this because our classroom has a computer for each student.

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).

The number of Computer Science majors has increased significantly as shown in this table:

Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	5-year average
302	255	266	348	466	327

The following table shows year-year changes in the number of sections, the retention rate, and the success rate.

		Sections			Retention Rate			Success Rate		
		2014-15	2015-16	2016-17	2014-15	2015-16	2016-17	2014-15	2015-16	2016-17
COMPB10	Intro to Progrm Method/Python	2	3	4	71.8%	76.4%	73.3%	32.4%	40.4%	42.5%
COMPB11	Progrmming Concepts & Method I	4	7	9	84.2%	82.4%	81.7%	63.2%	57.7%	55.9%
COMPB12	Programming Concppts & Methd II	1	1	5	78.8%	75.0%	92.7%	48.5%	55.0%	81.0%
COMPB13	Computer Architecture & Organi	1	2	2	68.0%	73.2%	66.7%	56.0%	53.6%	43.8%
COMPB14	Discrete Structures	1	1	2	63.6%	92.6%	96.2%	54.5%	85.2%	96.2%

1. Please report on any unexpected changes or challenges that your program encountered this cycle:
None that I am aware of.
2. How does your trend data impact your decision making process for your program?
We are trying to offer enough classes at enough different times so that students' pathways are not held up by course unavailability.
3. Were there any changes to student success and retention for face-to-face, as well as online/distance courses?
Yes, COMP B12's success rate went up considerably, COMP B13's went down a bit, and COMP B14's went up some. For the two that went up, I believe that the difference is due to having a different instructor, with different teaching/grading styles. I don't know the reason for COMP B13's decline. There are no online/distance courses in this program.
4. Were there any changes to student demographics (age, gender, or ethnicity) for the past cycle?
No demographic data breakdown has been provided for the AS-T program. Note that half of the classes required for the AD-T are not in the Computer Science department. Students in other programs also take these courses, so no definitive answer to this question is possible, given the available data.

Resource Request and Analysis:

Resource Request		If Fulfilled, Discuss How Previous Year's Requests Impact Program Effectiveness?
<p>Positions: <i>Discuss the impact new and/or replacement faculty and/or staff had on your program's effectiveness.</i></p>	<input type="checkbox"/> 1: Classified Staff <input type="checkbox"/> 2: Faculty	
<p>Professional Development: <i>Describe briefly, the effectiveness of the professional development your program has been engaged in (either providing or attending) during the last cycle</i></p>	<input type="checkbox"/> 1: Provided Professional Development <input type="checkbox"/> 2: Attended Professional Development	<p>Most faculty members attend FLEX activities. These activities lead to improved technical knowledge and teaching.</p>
<p>Facilities: <i>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.</i></p>	<input 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>Technology: <i>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?</i></p>	<input type="checkbox"/> 1: Replacement Technology <input type="checkbox"/> 2: New Technology <input type="checkbox"/> 3: Software <input type="checkbox"/> 4: Other _____	<p>Over the summer, the computer lab in B2 received new, faster computers that have reduced the time for students to log in. This has enabled me to give online quizzes right at the beginning of class, engaging students right at the beginning of class.</p>
<p>Resource Request</p>		<p>Discuss How Effective Request is for Student Success?</p>

<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>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>		

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.

We are working hard to increase student awareness of our program and how it can lead to rewarding careers. As discussed under the section entitled Program Analysis, the number of students who have chosen the Computer Science major has increased significantly. We also working hard to maximize student success in our program. The number of students graduating in our young program has increased dramatically (1 in 2015, 2 in 2016, and 9 in 2017). Of course, I don't expect this progression to continue, but we hope to have steadily-increasing numbers for some time.