Bakersfield College
Program Review – Annual Update 2016

I. Program Information:

Program Name: **Radiologic Technology Program**

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:

One of the three primary tenets of the Bakersfield College mission is to provide excellent learning opportunities in career and technical education for our community which permits students to thrive in our local workforce and KCCD service area.
The Radiologic Technology Program meets this primary mission by providing an educational opportunity within the Health Services Career Pathway and by program completers earning the Associate in Science degree. The program meets the critical community need in Kern County for workforce training of entry-level licensed radiologic technologists and by providing two job skill certificates (JSC) in fluoroscopy and venipuncture. The college mission is reinforced in the Program's learning outcomes and goals.

Program Mission Statement:
The mission of the Bakersfield College Radiologic Technology Program is to promote student success by providing quality instruction for graduates to competently practice radiography at the entry level.

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 Programmatic Accreditation with JRCERT and State CDPH-RHB	☒ 1: Student Learning ☐ 2: Student Progression and Completion ☐ 3: Facilities ☐ 4: Oversight and Accountability ☒ 5: Leadership and Engagement	☐ Completed: _____ (Date) ☐ Revised: _____ (Date) ☒ Ongoing: Fall 2015-State Visit (Date)	Fall 2015 State Visit: Met Title 17 Regulations with On-Site Visit to College and Clinical Education Sites; Fall 2016 JRCERT Site Visit: Scheduled for Nov 17 & 18, 2016
2.Develop Learning Activities and Methodologies utilizing the new radiographic & fluoroscopic equipment installed in summer 2015	☒ 1: Student Learning ☒ 2: Student Progression and Completion ☒ 3: Facilities ☐ 4: Oversight and Accountability ☐ 5: Leadership and Engagement	☐ Completed: _____ (Date) ☐ Revised: _____ (Date) ☒ Ongoing: 2015-2016 and 2016-2017(Date)	Activities for all radiography lab courses (RADT B2a,b and c, RADT B3a and b, and RADT B5) were either revised and/or developed new for the new digital equipment in 2015-16. On-going goals for 2016-2017 include utilization of the medical grade paper printer for use in labs together with greater implementation of saving images to CD's and USB's to reduce use of more expensive x-ray film.

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
Explore alternative media storage for radiographic images and use of these images in the x-ray lab. Explore the computer technology and Canvas platform needed to implement this. Requires student computer workstations and additional computers in MS-21.	☒ 1: Student Learning ☒ 2: Student Progression and Completion ☒ 3: Facilities ☐ 4: Oversight and Accountability ☐ 5: Leadership and Engagement	Reduce expense of film cost. Increase efficiency of image review from multiple electronic devices.

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).

Program demographics indicate that the female population ranged from 60-75% from 2011-2012 to 2015-2016 academic years. The male population varied from 24-40% from 2011-2012 to 2015-2016. The demographics for the program consistently demonstrate a somewhat disproportionate rate compared with the college as college-wide population. College-wide date for 2015-2016 there are 54% females/45% males (these numbers do not equal 100% but the trend data reports this). Age demographics indicate that the program percentage of females enrolled is higher than the BC student population while male population is lower. This data does match anecdotal workforce demographics for radiologic technology.

The highest population of students at the college for 2015-2016 is the 20-29 age range (51%) and this is also the highest population of students within the program (47% for 2015-2016). One major difference in program statistics vs. college statistics is that the program has 0% of its student population from age 19 & under while the college average for the past year is 28%. Another major difference in program statistics vs. college statistics is that the program has an older age population with 33% of students in the 30-39 age range while the college average is 13%. The most likely rationale for this is that the program has 1 year of prerequisites to complete prior to applying for program entry as well as a 2 year wait list to enter the program once program prerequisites are met.

Program ethnicity somewhat mirrors college data with Hispanics/Latinos representing the largest group of students. This population was lower for the program at 51% while the college was 66% for 2015-2016. The percentage of white students for the program is 11% higher than the college (33% compared to 22%) for this past year. The African American population enrolled in the program for 2015-2016 was the same as the college at 4% but this represented a 2% from 2014-2015. The Asian/Filipino/Pacific Islander population for the program is higher than the college average for 2015-2016 with 9% compared to 4%. The program needs to continue to engage with the college educational advisors/counselors and special population groups on campus (Veteran's, African American males, SGA and others) to explore the radiography career while also continuing to participate in outreach activities with high school students and various career days. In 2015-2016, the Radiologic Technology faculty participated in the CTE Allied Health career day and the SGA career day to promote student access.

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

Program course enrollment remained stable from 2010-2015 on its number of sections (18 or 19) and number of students/section (varied only 20-22) for face-to face classes. There are no on-line courses for the program.

The program demonstrated lower subject productivity from 2011-2015 when compared to the college. Program productivity ranged from 13.0-15.7 FTES/FTEF while the college ranged from 16.6-17.5 FTES/FTEF for this same time period. Overall, program costs fall below the State apportionment allotted for FTES for a smaller program that is State regulated by a low faculty-to-student ratio in laboratory science course sections.

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

Success and retention rates continue to remain excellent and significantly above college-wide statistics. Program retention was 97-100% for the past five years (2011-2015) while college retention for face-to-face courses varied from 84-87% for the same time period. Program success remains excellent with 95-99% while college success was significantly lower with 68-71% for 2011-2015. There are no online/distance education courses.

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

- State of California, Employment Development Department (EDD) (www.labormarketinfo.edd.ca.gov) projects an "outlook or demand" increase of 13.9% from 2014-2024 (from 16,600 to 18,900) for radiologic technologists in California. The career of radiologic technology is a high wage career that remains in demand. EDD data indicates that the 2016-1st quarter hourly mean wage is $37.10/hour.
- Graduate surveys conducted by the program annually have demonstrated a 100% local employment rate for program graduates within Kern County from 2011-2015 (defined by graduates seeking employment and those not continuing their education).
- The Employer Survey for program graduates is conducted 1-year following completion. The 2015 Employer Survey stated 100% satisfaction with the performance of program graduates by stating that their satisfaction was excellent (67%) or meet expectations (33%). This data matches the program's benchmark. The 2015 survey demonstrated the same satisfaction as in the 2014 survey.

IV. Program Assessment (focus on most recent year):
Use attached **Assessment Report Form AU Tab**

A. Describe *any significant changes* in your program's strengths since last year.
Our program strengths continue to be licensure exam pass rates, the local medical imaging community support provided to the program and the program's ability to meet local employment needs.
- The licensure pass rates with the American Registry of Radiologic Technologists remain consistently excellent. Eighty-nine (89) examinees have passed the exam on the first attempt for the 5-year period of 2011-2015 with a mean pass rate of 92.13%. College results continue to 2-4% higher than the national mean for this percentage.
- 100% of program graduates in both 2015 and 2016 rated the quality of faculty lectures and presentation as excellent or good on the Program Completion Survey. Faculty continue to maintain currency in the professional radiography discipline and employ relevant education in emerging x-ray technologies including digital imaging.
- The program has a wide breadth of clinical education agencies that partner with the college to provide quality opportunities for student engagement and learning in the clinical environment. Opportunities for learning include acute care hospitals, radiology and orthopedic offices and include locations in both Bakersfield and Delano, CA which provides a wide breadth of training opportunities and employment opportunities within Kern County

B. Describe *any significant changes* in your program's weaknesses since last year.
As reported in the 2015 Annual Program Review, the community continues to request life-long opportunities in medical imaging including mammography and computed tomography education. Meeting this request did not and will not occur this year as the program is currently focusing on mentoring a new faculty member hired for 2016-2017 which represents 1/3 of the faculty. In addition, the program director is prioritizing the daily work of the department

assistant position (refer to letter "c" below) and preparing for national re-accreditation and an on-site visit by the JRCERT in November 2016. This has not permitted any change to occur in the area of continuing education course development and offerings.

C. If applicable, describe any unplanned events that affected your program.
There was approximately a 6-month vacancy in the department assistant position that supports the Radiologic Technology Program. This has directly increased the workload of the faculty director to keep the daily work flow occurring for college reporting but also for programmatic reports to both of the outside agencies that accredit the program. This includes the State Department of Public Health, Radiologic Health Branch and the Joint Review Committee on Education in Radiologic Technology (JRCERT). While this position was filled within the department there is a steep learning curve for the assistant that remains today which also impacts meeting deadlines.

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

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 program is requesting one FT faculty replacement position for 2017-2018 due to one anticipated retirement effective in May 2017. This retirement represents 1/3 of the FT faculty for the program. Hiring a replacement faculty member will maintain access to the Rad Tech program and enable all courses within the AS Degree to be taught. This supports student success by each student cohort through the program, having them attain a degree and gain subsequent employment.
   Future plans include another FT faculty replacement position for 2018-2019 for one anticipated retirement effective May 2018. This means that the entire faculty of the radiologic technology program will have been replaced between 2016-2018. The program continues to proactively mentor adjunct faculty and other individuals on how to qualify for instructor positions at the college by participating in BC hiring workshops and meeting with interested individuals.

   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.

   The need for professional development specific to radiography, radiography education and instructional methodologies and the college are in greater need than they ever were due to faculty retirements from 2016-2018. In the past, program faculty have participated in professional development workshops and opportunities on-campus as well as off-campus by attending radiography education professional meetings. The radiography professional meetings, supported through CTE/VTEA funding, have provided effective opportunities to gain knowledge on instructional methodologies and adult student learning in face-to-face and clinical environments and this needs to continue.
   Maintenance of competency in radiologic technology education standards was also a goal by attending a national conference of collegiate educators in radiography and also by specialized training provided on-campus in the x-ray lab by an equipment vendor. On-campus professional development

has included participating in student success initiatives including Habits of Mind, Student Equity and others. Faculty have implemented multiple strategies learned in these professional development activities and made them best practices within the radiography course work which promotes student success. Flex week professional development activities that provide opportunities for learning about college initiatives and activities such as Canvas training.

b. What professional development opportunities and contributions can your program make to the college in the future?
Professional development is necessary for faculty to remain current in the medical imaging technologies and regulatory requirements the program must implement for radiography licensure and accreditation. With the complete turnover of FT faculty in the next two years, this information was and will be regularly and deliberately shared with adjunct faculty to increase their knowledge in these areas. Adjunct faculty are always invited to attend the bi-weekly program faculty meetings to keep informed on student progression and policy and procedural changes. Experienced faculty members are mentoring new faculty as well as adjunct faculty and the professional experts who serve as the Clinical Instructors at affiliated clinical facilities. To formalize development of these individuals, dissemination to the program's clinical partners during the quarterly advisory meetings will include specific agenda items on professional development and college/program policies and procedures.

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

From last year's annual program review, multiple positive changes were made in the x-ray laboratory on campus. The primary change was the implementing new activities and experiments in lab courses because the new digital and fluoroscopic equipment permitted practice on equipment that now replicates industry standards. One example was the new mobile fluoroscopic unit which enabled students to explore its use in a safe and quite teaching environment in comparison to learning a busy surgery suite at the hospital. Every enrolled student was able to learn the correct operation of the unit and perform multiple experiments with it. Both the Program Completion Survey completed by the May 2016 program graduates and the Employer Survey conducted annually discussed the positive outcome of having this piece of equipment in lab.
Following the installation of new equipment in summer 2015, the faculty also requested new bulletin boards for the lab and enabled the program to include student award plaques and pictures in the lab rather than having blank concrete walls. This provides external motivation to teach and learn when the environment is pleasant.

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

Safety concerns still exist in MS-54. The carpet in MS-54 has been taped together for over 7+ years and poses a regular tripping hazard. The carpet continues to pull up. The flooring was scheduled for replacement in summer 2015 but this was not completed by Maintenance and Operations.

BC Goals include facilities and infrastructure which specifies improvement and general maintenance. The facilities request for 2016-2017 includes one request from the past 5-6 program reviews. Specifically, painting and flooring replacement of the Allied Health wing of the Math-Science building is again being requested. The interior of Allied Health has never been renovated in 21 years since built in 1995. Basic maintenance/repair of aging facilities fits the college strategic goal for maintaining its infrastructure and by providing an external motivator for positive student engagement in a facility that is both clean and safe to utilize.

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?
New equipment in spring 2016 included a medical grade paper printer for use in the radiologic technology laboratory. This will enable the program to use paper instead of medical radiography film for some lab reports. This will permit students to directly write onto the paper for inclusion in the report. Student success is indirectly improved by possibly redirecting funds for x-ray film in future years if additional computers can be incorporated into the x-ray lab which would permit students to display and use medical images in electronic form which would mimic industry standards.

2. How will your new or repurposed classroom, office technology and/or equipment request contribute to student success?
No repurposed classroom, office technology or equipment.

3. Discuss the effectiveness of technology used in your area to meet college strategic goals.
College strategic goals include the maintenance and funding for technology, facilities and infrastructure. Future lab renovations which are discussed in the Technology and Other Equipment Requests in this Program Review will help the program meet the college strategic goals of educating students for a modern technology competent workforce. Educational accreditation standards can also be met which require curricular offerings and labs to meet industry standards which support student completion and competency for the workforce.

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

The Radiologic Technology faculty position being requested is necessary to teach all courses within the AS Radiologic Technology Degree as well have the skills to teach Venipuncture. In addition, this position is also necessary to continue to maintain State and national JRCERT programmatic accreditation standards for the faculty position of Clinical Coordinator.

The classified staff DAIII position being requested is to support the expanding Allied Health Department and specifically the new Health Information and Technology (HIT) Program being developed this year for implementation in 2017-2018 as well as the Radiologic Technology Program. Nineteen hours of a current DAIII position is budgeted for the radiologic technology program; however with the overall growth in the Nursing Department, the hours worked for this program never reach this amount. The HIT program will be have programmatic accreditation similar to radiologic technology and the program will require support to complete the accreditation process with only 1 faculty member working in this program.

The budget form for 2016-2017 planning identifies the requested budget for the Radiologic Technology Program without personnel costs. The budget request form submitted for planning reflects a more accurate projection of costs compared to the budget form submitted through the Dean by the Program Review Committee and Business Services Department. Therefore, the budget form was extensively revised for planning purposes to include accounts for materials fees which were not listed on the budget form sent to our area Dean. These were added to reflect on-going year-to-year operations.

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.

The Radiologic Technology Program is a highly successful Associate in Science Degree program at the college which continues to meet one of the primary missions of the California Community College Core Mission through Career and Technical Education. The career of radiography is a high demand, high wage career that serves the Kern Community College District service area by providing well qualified x-ray technologists that continue to meet community needs every year. The program also meets the core values of the college by fostering critical thinking, developing ethical standards for the safe use of radiation with patients, fostering diversity in the care of patients and a strong commitment and partnership with our Kern County medical community in training competently trained individuals for the local workforce.

Program outcomes remain excellent with both success and course retention exceeding college-wide performance. In addition, the program maintains outstanding licensure exam results for national radiography and state fluoroscopy licenses and has excellent employment for the graduates. To continue to maintain this excellence in the future while providing well trained medical imaging professionals for employment, the highest program priority is to replace one faculty member for 2017-2018 and to ensure sufficient clerical support to promote the successful continuance of 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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☒ Faculty Request Form	☒ Classified Request Form	☒ Budget Form
☒ Professional Development Form	☒ ISIT Form	☒ Facilities Form (Includes Equipment)

☒ Other: Assessment Form, Other Equipment Request Form