**Bakersfield College**

**Program Review – Annual Update**

**I. Program Information:**

Program Name: Construction Technology (Engineering and Industrial Technology Department)

Program Type: X Instructional

Program Mission Statement: The construction program supports the many diverse construction occupations within the County of Kern’s five main construction sectors (Residential, commercial, industrial, heavy civil and environmental construction sectors). Because of Kern County’s rising need for skilled construction personnel, the Construction Technology program is dedicated to provide involved students with the opportunity to develop skills and knowledge for enter into these construction sectors. Emphasis is placed on blending technical skill development with practical lab exercises.

The construction program and related staff strive to offer relevant, current and student centered instruction. Instructors are also sensitive to the diversity of our students, their educational needs, and their career goals. To accommodate our diverse student population, much of the instruction is modularized, interactive and self paced. The construction staff is also sensitive in assisting each student to define their specific career goal.

Program Description: Describe how the program supports the Bakersfield College Mission

**Career and Technical Education:** Students have the opportunity to obtain a Certificate of Achievement or an Associate of Science degree. These involved students select these courses from the Construction Technology area and/or from the various related departmental programs (Industrial Drawing, Architecture, Wood Technology and Industrial Technology). Many students from other disciplines (i.e. architecture, wood working and etc.) also take various construction courses to enhance their related professional growth.

**Transfer:** Introduction to Construction and Estimating, Print Reading & Scheduling courses are transferable. Furthermore many transferring students in the architecture, industrial drawing, construction management and wood working programs find that the various construction courses and related construction experience complements their personal professional growth.

**Basic skill:** The construction program recognizes that many of the involved students are deficient in basic math, reading, writing and workforce preparation skills. Recognizing this, much of the instruction is self-paced and modularized. Students needing further basic skill support are encouraged to seek support from services within the college.

**II. Program Assessment (focus on most recent year):**

A. How did your outcomes assessment results inform your program planning?

Within the last two years, the need to refine curriculum related to building green concepts, safety and other technical aspects related to construction was identified and addressed. The need to also refine the lab construction lab for student efficiency and safety was also identified. Lastly, the need to develop lab activities complementing common construction standards was noted.

B. How did your outcomes assessment results inform your resource requests?

The instructor has refined the curriculum and instruction as follows:

Technical: The technical instruction has been refined into individual interactive computer based assignments. The evaluation of student’s progress has also been refined. The instructor recognizes the need to further develop learning activities that replicate common construction concepts.

Safety: The instructor refined the safety and technical redesigned safety modules. Many of these assignments are completed online. These safety assignments are reinforced with related instructor demonstration and discussion. Students also participated in identifying and correcting any safety issues in lab.

Green construction: The CNST 50A and CNST 50B courses have integrated green construction techniques into the instruction. The present challenge is to develop cost effective lab exercises into the instruction. It is a goal to seek advice on this topic from both industry professionals and construction advisory members.

How do course level student learning outcomes align with program learning outcomes?

Most of the instruction has been modularized and self paced. Many of these units are intended to recognize and complete the related student learning outcomes. After each instructional unit and related activity students are evaluated on their success in attaining proficiency of the involved student-learning outcome.

How do the program learning outcomes align with Institutional Learning Outcomes?

*Pursue knowledge and evaluate its consequences:* To accommodate our diverse student population, much of the instruction is modularized, interactive and self paced. Program makes every effort in blending course instruction with relevant lab activities.

*Communicate clearly and effectively in both written and oral forms:* In these class activities, students work individually or in a group and are required to communicate and /or express their skill and knowledge of that specific topic.

*Demonstrate knowledge and abilities in a chosen area of study:* On every lab activity, students are required to demonstrate skill and knowledge of the specific topic before they are allowed to move onto the next topic.

*Appreciate their civic responsibilities:* The construction industry is a dynamic profession that requires attention to civic responsibility, business ethics and social responsibility. Instruction and skill development activities make every effort to replicate these important responsibilities.

1. Describe *any significant changes* in your program’s strengths since last year.

Summary:

Construction program continues to work with community and advisory members in improving curriculum and instruction.

Involved management within Bakersfield College has changed and their input and direction has been helpful to the construction program.

Improving economy has increased the demand for skilled construction workers (see attached documentation).

The construction advisory committee has been refined with hopes of greater input and participation.

Safety and lab facilities-Students and instructor have improved construction lab for efficiency and safety. Over the last five years, the construction program has had to move lab facilities two times. Both times the labs were not up to both acceptable teaching and safety standards. The instructor and students have invested a considerable amount of work in bringing the present lab to an acceptable standard. Students and instructor have installed lab safety accessories and related safety signage. Lab has been improved to industry standards.

To complement these changes and to improve instruction, students have designed and fabricated educational trainer units. These “trainers” provide students with real construction scenarios in a cost effective manner.

1. Describe *any significant changes* in your program’s weaknesses since last year.

As previously mentioned, much of the instruction has been refined. The intent of this course instruction refinement was to meet many of the colleges goals mentioned in this program review document. Instruction was computer based, modularized, interactive and self paced. However the involved computer lab was recently reimaged and the involved staff lost the registration key for the related courseware. Thus, most of the courseware and related class assignments were deleted. To develop new units of instruction would take the instructor hundreds of hours to redevelop.

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

As mentioned above, deletion of the discussed courseware occurred right before the semester began. Students were not able to gain from the extensive sets of developed courseware.

**III. Resource Analysis:**

1. Human Resources
2. If you are requesting any additional positions, explain briefly how the additional positions will contribute to increased student success. No position requested
3. Professional Development
4. Describe briefly the effectiveness of the professional development your program has been engaged with (either providing or attending) during the last cycle, focusing on how it contributed to student success.

To complement instruction and improve program integrity instructor maintains a Class B General Contractors license. He also maintains the requirements for his American Welding Society- Certified Welding Inspectors license. Instructor also maintains certificates in construction related areas.

1. Provide rationale for future professional development opportunities and contributions that your program can make.

Involved construction students appreciate instructors that have the relevant professional credentials. Instructor will make every effort to maintain noted construction licenses and certifications. As new trends emerge in the construction field, instructor will make every effort to obtain relevant licensure.

1. Facilities (M&O requests can be submitted by completing the M&O request form.

Has your area received any facilities maintenance, repair or updating in this cycle? No

1. If yes, how has the outcome contributed to student success?

If no, how will your facilities request contribute to student success? No, students and instructor have made lab significant improvements through various lab activities. It should be noted that these improvements have been made at little or no cost to the college.

1. Technology
2. Has your program received new or repurposed technology in this cycle? No
   1. If yes, how has this technology contributed to student success?

If no, how will your new or repurposed technology request contribute to student success? No, as previously discussed, since courseware was deleted from the involved computer lab, prior request for computers in the construction lab is not necessary.

1. Do you need new or repurposed classroom technology to support student success and/or new office technology to support faculty/staff success? Justify your request. No, as previously discussed, since courseware was deleted from the involved computer lab, prior request for computers in the construction lab is not necessary.
2. Budget (Changes to the budget allocation can be requested using the [Budget Change Request Form](http://committees.kccd.edu/bc/committee/programreview)).

If you are requesting any additional funding, explain briefly how it will contribute to increased student success. Instructor makes every effort to make lab activities that are cost effective. Community members have been helpful in supporting these lab activities.

**IV. Trend Data Analysis:**

Highlight *any significant changes* in the following metrics and discuss what such changes mean to your program.

1. Changes in student demographics (gender, age and ethnicity). *See attached data:*

The attached data is quite lengthy and indicates that the construction workforce is shrinking due to numerous reasons. Political issues, such as immigration reform, are having an impact on the construction workforce. Fueling the need for skilled construction workers is the improving national, state and local economies.

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

The night construction program enrollment maintains good enrollment (Introduction to Construction and Estimating, Scheduling and Print Reading). The morning construction program classes (Construction 50A & B) have experienced a decline in enrollment. This is a recognized concern and involved personnel are dialoging on refining course delivery and more. Construction instructor is encouraged by the involved managements desire to solve this challenge in a positive way. Instructor is also encouraged in having a quality advisory committee and group of numerous community supporters.

1. Success and retention for face-to-face, as well as online/distance courses.
2. Other program-specific data that reflects significant changes *(please specify or attach).*

Based on the extensive data (see attached), the need skilled construction worker is growing, the construction advisory and other community members are dialoging on how the construction program can better address this need.

There is a recognized need to evaluate student enrollment and retention. Involved staff is looking at addressing the noted concerns and develop a delivery system that gets results.

Our construction programs have been operating with a minimal investment by the college; equipment was purchased mainly through a HUD grant, and many of the materials used have been donated and purchased by sources outside of GUI funding.

**V. Progress on Program Goals:**

1. 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.

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| **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**  **(if applicable)** |
| 1. Improve lab facilities for safety and efficiency. 2. Develop instructional training units. | X 1: Student Success  2: Communication  X 3: Facilities & Infrastructure  4: Oversight & Accountability  5: Integration  6: Professional Development | Completed:  May 2014  ) |  |

1. New or revised goals (if applicable)

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| --- | --- | --- |
| **New/Replacement Program Goal** | **Which institutional goals from the Bakersfield College Strategic Plan will be advanced upon completion of this goal? (select all that apply)** | **Anticipated Results** |
| Student retention | X 1: Student Success  2: Communication  3: Facilities & Infrastructure  4: Oversight & Accountability  5: Integration  6: Professional Development | Better success on student retention and improved completion of core indicators |

**VI. Curricular Review (Instructional Programs only):**

1. Review of Course Information:
   * Column A list all of the courses associated with the degree.
   * Column B lists the fall term the review process will be started for ongoing compliance.
   * Column C list the compliance due date.
   * Column D list any changes to courses with regard to distance education.
   * Column E list corresponding C-ID descriptors if available. <http://www.c-id.net/>

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| **A. Course** | **B. Fall Term Review will be Submitted** | **C. Compliance Due Date** | **D. Distance Education Changes** | **E. C-ID Descriptors Available** |
| Introduction to Construction-CNST B1 | 2019 | 2019-2020 | None | Descriptors not available |
| Estimating, Scheduling & Print Reading-CNST B2 | 2019 | 2019-2012 | None | Descriptors not available |
| Residential Construction 50A-CNST 50A | 2014 | 2014-2015 | None | Descriptors not available |
| Residential Construction 50B-CNST 50B | 2014 | 2014-2015 | None | Descriptors not available |

1. Review of Program Information:

Is the program information housed in CurricUNET accurate? (Considerations: changes in course(s) names and/or suffixes as well as additions/deletions of courses). If not, then a program modification needs to be started in CurricUNET to reflect the necessary changes. Explain the requested changes below.

Curriculum to this date is accurate

Is the program and course listing information in the current catalog accurate? If not, list the requested

changes below. Catalog information should reflect what is in CurricUNET.

Instructor has noted a possible error in the related certificate (work experience credit). Instructor will dialog with appropriate BC staff to clarify any such discrepancy.

1. Student Education Plan (SEP) Pathway(s) uploaded to “Attached Files” in CurricUNET.

If applicable, SEP Pathway with CSU Breadth indicated? No

If applicable, SEP Pathway with IGETC indicated? No

If applicable, SEP Pathway with BC General Education indicated? No

1. If applicable, provide a description of the program’s future adoption of C-ID descriptors and Associate Degree for Transfer (ADT) or Model Curricula.

NA  
**VII. Conclusions and Findings:**

Present any conclusions and findings about the program.

The construction program is encouraged by the numerous reports that indicate a strong demand for a broad section of construction jobs.

The revisions in curriculum and instruction over the last three years have been positive. The development of related instructional trainer units is complementing these revisions.

The construction program is pleased that it has refined the construction lab for student efficiency and safety.

The program is also encouraged that the current immediate management is providing positive support. They appear to realize that prior decisions have had significant impact on the success and direction of the construction program. Refinements in the construction advisory committee will assist in providing additional support.

The construction program realizes the need to develop lab exercises that reflect common construction techniques and emerging green building techniques. To do this in a cost effective manner is a challenge. The instructor is looking forward to working with the advisory committee and other involved construction personnel in the development and refinement of these lab activities.

The construction program is dedicated to providing quality education to its students. It is also dedicated to the mission and success of the college. With this in mind, the construction program recognizes the need to improve enrollment and retention in CNST 50A & CNST B50B. Input from support personnel will be consulted.

**VIII. Attachments (place a checkmark beside the forms listed below that are attached):**

X: Best Practices Form X Other: Employment and related data attached

**IX. Certificates of Achievement:**

Programs with stackable certificates fill out the following form.

Stand alone certificates fill out the entire Annual Update.

**Certificate Form**

**Annual Update 2014-15**

**Name of Program:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Certificate Name** | **JSC** | **CA** | **Is the certificate stackable?** | **Is the certificate a**  **stand alone program?** |
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Please discuss the following questions regarding all area Certificates of Achievement (CA):

1. List certificates that are proposed for *addition*.
2. List certificates that are proposed for *deletion*.
3. For this CA, what are the SOC codes (Occupational Titles and codes) that students who complete the CA will be able to obtain entry-level employment in, and what are the projected annual openings and median salary for each occupational title? You can use your latest Program Review data for your response.
4. For this CA, what process was followed to ensure the required and possible elective courses were adequate for entry-level employment (such as advisory committee input, surveys, industry feedback, licensing or accreditation agencies)? How often do/will you re-examine the effectiveness of certificate requirements?
5. What is your annual completion target (number of certificates awarded) for this CA? What was the number of awards in this CA for each of the past three years? Based on your results, what changes could you make in your program to meet or continue to exceed your target (such as course content, scheduling/sequence, outreach, instructional strategies)?
6. Based on what you know about your area, what emerging/potential institutional factors (internal) and industry factors (external) will impact this certificate? How are you planning to incorporate these factors in your planning and evaluation of this certificate?