Peralta Community College District

Berkeley City College
College of Alameda
Laney College
Merritt College

Career Technical Education (CTE) Program Review Handbook

Fall 2015
Version 4.

Table of Contents

Purpose and Goals

The information gathered during the program review process provides the basis for informed decision making in the Peralta Community College District. Comprehensive Instructional Program Review is a systematic process for the collection, analysis, and interpretation of data concerning a program or department and its curriculum. It provides program and/or departmental accountability by collecting, analyzing and disseminating information that will inform integrated planning, resource allocation, and decision-making processes.

The primary goals are to:

- Ensure quality and excellence of academic programs.
- Provide a standardized methodology for review of instructional areas.
- Provide a mechanism for demonstrating continuous quality improvement, producing a foundation for action.
- Identify effective and exemplary practices.
- Strengthen planning and decision-making based upon current data.
- Identify resource needs.
- Develop recommendations and strategies concerning future directions and provide evidence supporting plans for the future, within the department, at the college and at the District level.
- Inform integrated planning at all levels within the College and the District.
- Ensure that educational programs reflect student needs, encourage student success, and foster improved teaching and learning.
- Provide a baseline document for demonstration of continuous improvement and use as a reference for future annual program updates.

Components in the Process

The CTE Program Review process, which occurs every three years, consists of answering a set of questions designed to aid in the examination of a discipline, department or program. These questions direct faculty to examine the curriculum, pedagogy, assessment results, and resource areas related to student success and to analyze findings in order to develop a plan that will improve the quality of teaching and learning.

The primary components in the CTE Program Review process include:

- The CTE Program Review Team
- Core data elements
- Completion of a CTE Program Review Narrative Report every three years
- Validation of the CTE Program Review Report
- Completion of three reporting templates (found in the appendix). They are:
    - The CTE *Program Review Resource Requests Template* in which to summarize key resource needs.
    - The *Integrated Goal Setting Template* in which to set goals, objectives and action plans based upon the Comprehensive Instructional Program Review findings in alignment with PCCD Strategic Goals and Institutional Objectives.
    - The *Validation Process Form* in which to document the validity of the program review.

- Annual Program Updates (APUs), which review progress in meeting goals identified in the CTE Program Review, are completed in the alternate years within the CTE Program Review three year-cycle.

Thus, the recommendations and priorities from the CTE Program Review feed directly into the development of departmental and/or unit plans. In turn, the departmental and/or unit plans serve as the driving mechanisms in formulation of updated educational, budget, technology and facilities plans.

The CTE Program Review Team

Each discipline, department or program at the college will assemble a Comprehensive Instructional Program Review Team at the College that is comprised of the following members:

- Department Chair, Program Coordinator, or discipline designee.
- Division Dean
- Two additional faculty members, if applicable.
- All faculty members within a department are encouraged to participate in the comprehensive Instructional Program Review process, although participation is not mandatory.
- A college body, such as a validation committee or institutional effectiveness committee, comprised of faculty outside of the discipline, department or program.

The CTE Program Review Team will analyze the core data elements, course outlines, SLO assessment results, and complete the CTE Program Review Narrative Report.

Validation: A designated college body, such as a validation committee or institutional effectiveness committee, will review the CTE Program Review Narrative Report to ensure completeness of the narrative report, the resource needs template, and the goal setting template.

The validation committee will complete the validation form, including signatures, included in Appendix C and make recommendations to the Vice President of Instruction.

CTE Core Data Elements

Part I. District Office

The *District Office of Institutional Research* will provide the following data to the College discipline, department or program by October 1st of each comprehensive program review year.

- Total enrollment data for each discipline, department or program (unduplicated) for the last three years disaggregated by age, gender, ethnicity and special populations.
- Enrollment data for individual courses, by time of day, fall, spring and summer sessions, for the last three years.
- FTES per FTEF (productivity) by course and discipline, department or program for the last three years.
- College productivity rate for the last three years.
- Productivity for comparable CTE departments for the last three years.
- Degrees and certificates awarded, by discipline, department or program disaggregated by age, sex and ethnicity for the last three years.
- Total degrees and certificates awarded by the college, per year, for the last three years.
- Retention rates by course and discipline, department or program for the last three years.
- Overall college retention rate.
- Retention rates for comparable CTE departments for the last three years.
- Course completion (student success) rates, by course and discipline, department or program for the last three years.
- College course completion rates for the last three years
- Faculty Demographics: Full-time/part-time, age, gender, ethnicity
- Labor Market Information and Trends:
    - Data by O*NET classification (from Career Zone California) on new and replacement job projections and wages
    - Data/Reports from Centers of Excellence (COE) on industry sectors
    - EMSI data or other sources of EDD data

Part II. College

A. The *Office of Instruction and/or the Curriculum Specialist* at the College will provide the following to each discipline, department or program.

- A list of active courses in the discipline, department or program and the date they were last updated/approved.
- A list of degrees and certificates

B. The *Office of Instruction and/or SLO Coordinators* at the College will provide the following to each discipline, department or program.

- A list of courses and programs that depicts the current status of assessments at the course and program levels.

C. The *Office of Instruction* at the College will provide the following to each discipline, department or program.

- A copy of the PCCD Strategic Goals and Institutional Objectives for the current academic year.
- A copy of the College Goals and Objectives for the current academic year.

Definitions

Discipline: An individual area of study within a department/program. Each discipline consists of all the courses in the Master Course file that make of the discipline. This is the baseline level of instruction and is linked to a Taxonomy of Programs (TOP) code. TOP is a classification system for academic programs in the California Community Colleges.

Department/Program: An organized sequence of courses, or series of interdisciplinary courses, leading to a defined objective, a degree, a certificate, a diploma, a license, or transfer to an institution of higher education (Title 5 Section 55000).

FTEF (Full Time Equivalent Faculty): Also known as load equivalency. A full-time instructor teaching 15 lecture hours per week for one semester = 1.0 FTEF. One lecture hour = 50 minute instructional period. One lab hour = .8 of one lecture hour equivalent. This is a semester, or term, measure.

FTES (Full Time Equivalent Student): This measure is used as the basis for computation of state support for California Community Colleges. For example, one student attending 15 hours a week for 35 weeks (one academic year) generates 1 FTES.

WSCH: Weekly Student Contact Hours. For a particular class, Weekly Contact Hours = number of class hours per week, and WSCH for the class = total number of weekly contact hours for all students in the class as of census date.

To compute the FTES generated by a 17.5 week semester class use the formula:

FTES = WSCH x 17.5 / 525

For example, a class of 40 students meeting 3 hours per week generates 120 WSCH, and so

FTES = 120 x 17.5 / 525 = 4.0

FTES/FTEF (Productivity): The ratio of full-time equivalent students to full-time equivalent instructors. This is a measure of class size and will differ across disciplines and types of classes. For lecture classes, Productivity = enrollment/2. For example, if there are 35 students in a lecture class, productivity = 35/2 = 17.5.

Retention: The percent of students earning any grade but "W" in a course or series of courses. To compute retention for a class, take class completion with grade other than "W" and divide by enrollment at census. Grade other than W = A, B, C, D, F, I, Pass, No Pass, In Progress, Report Delayed, No Grade

Student Success: Course completion rate with a grade "C" or better.

The CTE Program Review Report

1. College: Laney College

Discipline, Department or Program: Environmental Control Technology

Date: 9-23-2015

Members of the Comprehensive Instructional Program Review Team:
Department Chair: Nick Kyriakopedi, Full-time faculty: Adan Rosillo, Part-time faculty: Hadley Hartshorn

Members of the Validation Team: Peter Crabtree, Nick Kyriakopedi

---

2. Narrative Description of the Discipline, Department or Program:
Environmental Control Technology is a technical program offering the theoretical, technical, and problem-solving skills essential for employment in the heating, ventilation, air conditioning, refrigeration, energy efficiency and building automation controls industry. Students completing the suggested curriculum can seek employment as refrigeration technicians, heating, ventilation, air conditioning technicians, control technicians and building maintenance engineers. Students will also be able to seek employment in energy efficiency related fields.

---

3. Curriculum:

Please answer the following questions and/or insert your most recent curriculum review report (within the past 3 years) here. In the summer of 2015 the department updated all the PLO's and SLO's and is in the process of updating all the course outlines.

Attach the Curriculum Review Report or Answer these Questions:

- Have all of your course outlines of record been updated or deactivated in the past three years? If not, list the courses that still need updating and specify when your department will update each one, within the next three years.

  There were some updates made two years ago on books and some minor changes on some courses. This semester we are in the process of updating all the courses, adding new courses, deactivating some courses and making changes to the programs.

- What are the discipline departments or programs of study plans for curriculum improvement (i.e., courses or programs to be developed, enhanced, or deactivated)?

  We are in the process of developing new courses and curriculum for the new Facilities Operations and Maintenance program.
  Example:
  1. Preventive Maintenance
  2. OSHA Safety
  3. Access and Security
  4. Air Distribution Systems
  5. Boilers
  6. Chillers
  7. Cooling Towers and Treatment
  8. Green Buildings Rating Systems

- Please list your degrees and/or certificates. Can any of these degrees and/or certificates be completed through Distance Education (50% or more of the course online)? Which degree or certificate?
  1. Refrigeration Certificate
  2. Residential and Light Commercial Certificate and Degree
  3. Commercial HVAC Certificate and Degree
  4. Building Automation Certificate and Degree

---

4. Assessment:

Please answer the following questions and attach the TaskStream "At a Glance" report for your discipline, department, or program for the past three years. Please review the "At a Glance" reports and answer the following questions.

Questions:

- How does your discipline, department or program ensure that students are aware of the learning outcomes of the courses and instructional programs in which they are enrolled? Where are your discipline, department or program course and program SLOs published? (For example: syllabi, catalog, department website, etc. If they are on a website, please include a live link to the page where they can be found)

  We publish our SLO's on each course syllabi, Taskstreem, and Curricunet.

- Briefly describe at least three of the **most significant changes/improvements** your discipline, department or program made in the past three years as a response to course and program assessment results. Please state the course number or program name and assessment cycle (year) for each example and attach the data from the "Status Report" section of TaskStream for these findings.

  Improvement 1
  We updated all the SLO's and PLO's.

Improvement 2
We assessed a number of courses during year 2013-2014 and 2014-2015 for ECT 11, 13, 14, 15, 16, 17, 18, 19, 21, 22, 24, 23, 25, 26, 34, 213 and 214.
We checked Taskstream and the courses I submitted show "view" but no status report. We are still waiting for approval. I will be contacting assessment coordinator ASAP for answers.

Improvement 3
We are in the process of updating all the ECT courses adding and deleting some courses. We are also working on changing course titles and program titles.

- Briefly describe three of the **most significant examples** of your discipline, department or program plans for course and /or program level improvement for the next three years as result of what you learned during the assessment process. Please state the course number or program name and attach the data from the "Assessment Findings and Action Plan" section for each example.

Plan 1
We are currently updating all the courses and developing new measuring tools to better assess our courses. We are also updating our curriculum and programs.
It has been observed through several course assessments by two different instructors and has been determined that students attending the ECT program need more basic skills in math. Some students scored better during the observation period (2 semesters) however, the majority of students exhibit poor math skills and learning habits. As a result of our findings, we are working on a prescreen test to be able to identify students who need more, early in the process to be able help them with tutorials to better serve our students. Future changes and or additions to improve student's math skills include:

- Better screening process including written and verbal tests
- Work with high schools in the area to address math skills needed for technical programs
- Create a short class for students wishing to enroll in our ECT or other technical programs
- In-house tutoring program

Plan 2
Math, English and lack of basic computer skills is a common problem for ECT and other technical program students. These are not only skills, but they are essential in order to take full advantage of our programs and they're also industry required skills for students to be able obtain and keep a job in the HVAC, DDC and in the Energy Efficiency sector. These steps taken by the ECT department will alleviate the situation by requiring students to take basic computer skills, Communication and other courses in basic skills to be able to help our students succeed.

Plan 3
Courses from two programs currently active in the ECT department were reviewed during the summer of 2015, the Residential and Light Commercial HVAC and the Commercial HVAC Programs. We focused on the skills required by the industry and the academic rigor demanded by Laney College in all technical programs. As a result, modifications to several courses were identified.

1. ECT001 – Physics for Building Science: Changes include reducing the number of units from four to two and to modify the curriculum to include lab practices applied to commercial buildings
2. ECT 22 and ECT 24 – These two courses will be merging into a single class.
3. ECT40 – Introduction to Control Systems Networking: This course will be eliminated and we will add Communication and OSHA Safety
4. ECT26 – Advanced Building Commissioning: The title will be changed and some of the course content.

- Describe how assessment results for Distance Education courses and/or programs compare to the results for the corresponding face-to-face classes.

  Currently the department does not have any Distance Education courses.

- Describe assessment results for courses with multiple sections. Are there similar results in each section?

  There are no courses with multiple sections in our program.

- Describe your discipline, department or program participation in assessment of institutional level outcomes (ILOs).

  The ECT instructors met several times during the summer of 2015 to review the program level outcomes (PLOs) in conjunction with the ILOs and the SLOs as well. The ECT department has not participated directly in the assessment of the ILOs.

- How are your course and/or program level outcomes aligned with the institutional level outcomes? Please describe and attach the "Goal Alignment Summary" from TaskStream.

  The Residential and Light Commercial HVAC and the Commercial HVAC programs were reviewed during the summer of 2015; our team focus was to modify our PLOs to match the need of our programs and to align them with the ILOs.

  See Goal Alignment Summary in Exhibit XX

---

5. Instruction:

- Describe effective and innovative strategies used by faculty to involve students in the learning process.

  Faculty uses different types of software for students to practice troubleshooting, sizing equipment, sizing duct systems, energy calculations and the different types of software used in building automation controls. We also use the Cloud to exchange information with our students. This allows the students to get the exposure needed to the different ways of learning.

- How has new technology been used by the discipline, department or program to improve student learning?

  We extensively use computer technology to create a safer innovative advanced technology. Using computer software gives the department the luxury to allow students to work on problems at home.

- How does the discipline, department, or program maintain the integrity and consistency of academic standards with all methods of delivery, including face to face, hybrid, and Distance Education courses?

  We achieve this by placing many of our students in the industry, high completion of certificates and degrees.

  By having a real commercial HVAC system and controls installed in our ECT lab, we are giving students real world problems to solve and work on as well as using the knowledge they've gained along the way.

  Because our program is a technical program the best way to deliver the education is through a classroom and lab environment rather than distance education.

- How do you ensure that Distance Education classes have the same level of rigor as the corresponding face-to-face classes?

  N/A

- Briefly discuss the enrollment trends of your discipline, department or program. Include the following:

  Our enrollment varies as the economy changes. We see a pattern every time the economy is weak the enrollment goes up due to many people wanting to go back to college to further their education however, when the economy becomes strong again we tend to lose many of our students and sometimes even in the first semester because they get employed.

  - Overall enrollment trends in the past three years

ECT Enrollment

	Term								
	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
Headcount	27	164	150	13	163	131	18	127	120

  - An explanation of student demand (or lack thereof) for specific courses.

  The department has not experienced any specific demands from students.

  - Productivity for the discipline, department, or program compared to the college productivity rate.

ECT Productivity Rate

	Term								
	2012 SUMMER	2012 FALL	2013 SPRING	2013 SUMMER	2013 FALL	2014 SPRING	2014 SUMMER	2014 FALL	2015 SPRING
Productivity	15.74	12.51	11.48	7.71	11.95	11.44	10.77	9.55	9.27

Laney College Productivity Rate

Productivity	Term								
	2012 SUMMER	2012 FALL	2013 SPRING	2013 SUMMER	2013 FALL	2014 SPRING	2014 SUMMER	2014 FALL	2015 SPRING
Total	16.76	17.63	17.41	16.40	16.53	16.48	15.05	15.40	15.41

- Salient factors, if known, affecting the enrollment and productivity trends you mention above.

As mentioned previously when the economy is strong people tend to go to work rather than going to school. Sometimes students come under prepared and are not ready for college education. When they come to this realization they stop attending classes without any explanation.

- Are courses scheduled in a manner that meets student needs and demands? How do you know?

Yes, our program is scheduled in the evenings in order to accommodate most of our students work schedule and other demands. Most of our students work during the day and can only come to class at night.

- Recommendations and priorities.

I would like to start a day program with a few courses such as the fundamentals of refrigeration, electricity and air conditioning to accommodate some of the day students who are interested in the program and others who work in the evenings.

1) Offer some of the courses mentioned above within the next two semesters.
2) Build new trainers for day students to be able to work on so they don't interfere with the night program.

---

6. Student Success and Student Equity:

- Describe course completion rates *(% of students that earned a grade "C" or better or "Credit")* in the discipline, department, or program for the past three years. Please list each course separately. How do the discipline, department, or program course completion rates compare to the college course completion standard?

ECT Student Success

	Term								
	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
Success%	100.00%	84.97%	79.97%	92.31%	77.86%	81.78%	94.44%	73.73%	83.99%

Laney College Completion Standard

	Term 2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
Success%	74.07%	68.72%	66.34%	73.40%	66.34%	67.98%	72.79%	68.95%	69.11%

Department/discipline course completion rates

Success	Term								
Course	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
ECT 1 - PHYSICS/BLDG SCIENCE	100.00%	81.25%	NA	92.31%	70.59%	NA	94.44%	57.14%	NA
ECT 11 - MECHANICAL/ELEC DEVICES	NA	70.45%	77.78%	NA	73.68%	54.84%	NA	52.78%	66.67%
ECT 12 - BLUE PRINT READING FOR ECT	NA	80.00%	76.67%	NA	74.42%	59.26%	NA	52.00%	76.00%
ECT 13 - FUNDAMENTALS/REFRI	NA	77.27%	81.08%	NA	75.61%	53.33%	NA	52.50%	68.97%
ECT 14 - ADVANCED REFRI	NA	76.47%	70.37%	NA	78.26%	83.87%	NA	84.62%	80.95%
ECT 15 - REFRI TROUBLESHOTING	NA	86.67%	80.95%	NA	79.17%	93.10%	NA	100.00%	75.00%
ECT 16 - FUND/HEATING AND AIR COND	NA	100.00%	77.78%	NA	85.00%	NA	NA	NA	NA
ECT 16 - FUND/HVAC SYSTEMS	NA	NA	NA	NA	NA	93.10%	NA	85.71%	100.00%
ECT 17 - HEAT/AIR COND TROUBLSHOOT	NA	100.00%	87.50%	NA	90.00%	NA	NA	NA	NA
ECT 17 - HVAC TROUBLSHOOTING	NA	NA	NA	NA	NA	86.21%	NA	100.00%	100.00%
ECT 18 - HVAC INSTALLATION	NA	84.21%	92.00%	NA	80.95%	100.00%	NA	87.50%	100.00%
ECT 19 - PSYCHROMETRICS/LOAD CALCS	NA	80.00%	100.00%	NA	84.21%	78.57%	NA	88.89%	NA
ECT 21 - DIR DIGITAL CONTROLS	NA	94.74%	86.36%	NA	90.00%	64.71%	NA	77.78%	100.00%
ECT 211 - MECH/ELEC CODES	NA	76.19%	77.42%	NA	82.86%	68.00%	NA	50.00%	69.57%
ECT 212 - TESTING/ADJUSTING/BAL HVAC	NA	94.12%	100.00%	NA	76.47%	73.33%	NA	88.89%	NA
ECT 213 - INDOOR AIR QUALITY/BLDG ENV	NA	100.00%	75.00%	NA	75.00%	92.31%	NA	100.00%	100.00%
ECT 214 - TECHNICAL MATH FOR ECT	NA	73.91%	62.50%	NA	71.05%	70.83%	NA	39.29%	52.00%
ECT 22 - COMM HVAC SYSTEMS	NA	94.12%	90.48%	NA	82.61%	75.00%	NA	87.50%	100.00%
ECT 23 - HVAC SYSTEM DESIGN	NA	92.86%	86.67%	NA	91.67%	100.00%	NA	88.89%	92.31%
ECT 24 - HVAC TROUBLESHOOTING	NA	94.12%	90.91%	NA	77.27%	77.78%	NA	82.35%	100.00%
ECT 25 - INTRO TO BLDG COMMISSIONING	NA	92.86%	94.12%	NA	88.24%	92.31%	NA	82.35%	77.78%
ECT 26 - ADV BLDG COMMISSIONING	NA	100.00%	86.67%	NA	91.67%	100.00%	NA	90.00%	85.71%
ECT 27 - ADV DIGITAL CONTROLS	NA	82.61%	68.75%	NA	80.00%	100.00%	NA	100.00%	92.31%
ECT 28 - ENERGY/BLDG SYSTEMS	NA	86.96%	52.00%	NA	60.00%	93.94%	NA	80.00%	84.21%
ECT 29 - DATA ANALYSIS/PERFRM	NA	100.00%	66.67%	NA	80.00%	100.00%	NA	90.00%	94.12%
ECT 31 - INTRO TO DDC HARDWARE	NA	NA	83.33%	NA	NA	100.00%	NA	NA	NA
ECT 32 - CONTROL SYSTEMS DESIGN	NA	NA	78.95%	NA	NA	NA	NA	NA	84.62%
ECT 33 - NETWORKING/BLDG AUTOMATION	NA	85.71%	NA	NA	NA	NA	NA	78.57%	NA
ECT 34 - CONTROL ROUTINES/EFFICIENCY	NA	NA	88.89%	NA	NA	NA	NA	NA	100.00%
ECT 35 - CONTROL SYSTEMS INTEGRATION	NA	NA	NA	NA	66.67%	83.33%	NA	NA	85.71%
ECT 36 - ENERGY ISSUES, POLICIES&CODES	NA	NA	81.25%	NA	NA	92.31%	NA	NA	100.00%
ECT 37 - PC HARDWARE/BLDG TECHNICIANS	NA	93.33%	NA	NA	57.14%	NA	NA	100.00%	NA
ECT 40 - INTRO/CONTROL SYS NETWRKING	NA	100.00%	76.47%	NA	73.33%	92.86%	NA	100.00%	87.50%

Grand Total	**100.00%**	**84.97%**	**79.97%**	**92.31%**	**77.86%**	**81.78%**	**94.44%**	**73.73%**	**83.99%**

- Are there differences in the course completion rates when disaggregated by age, gender, ethnicity or special population (current or former foster youth, students with disabilities, low income students, Veterans)? If so, please describe.

  College course completion standard _____

  Please insert the data chart here or complete the section below.

  Department/discipline course completion rates:

  Course 1._____ _____
  (course name and number) rate

  Course 2. ._____ _____
  (course name and number) rate

  Course 3. ._____ _____
  (course name and number) rate

  ETC.

  Discussion:

- Describe course completion rates in the department for **Distance Education** courses (100% online) for the past three years. Please list each course separately. How do the department's Distance Education course completion rates compare to the college course completion standard?

  At the moment we are not offering any distance education courses.

No ECT DE courses from summer 2012 to spring 2015

Laney College DE Student Success

	Term 2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
Success%	70.05%	57.60%	50.86%	57.64%	51.30%	54.86%	62.58%	54.77%	51.44%

- Are there differences in the course completion rates when disaggregated by age, gender, ethnicity or special population (current or former foster youth, students with disabilities, low income students, Veterans)? If so, please describe

  College course completion standard _____

Please insert the data chart here or complete the section below.

Department/discipline Distance Education (100% online) course completion rates:

Course 1._____ _____
(course name and number) rate

Course 2. _____ _____
(course name and number) rate

Course 3. _____ _____
(course name and number) rate

ETC.

Discussion:

- Describe course completion rates in the department **for Hybrid** courses (less than 100% online) for the past three years. Please list each course separately. How do the department's Hybrid course completion rates compare to the college course completion standard?

  At the moment we are not offering any hybrid courses.

No ECT Hybrid courses from summer 2012 to spring 2015

Laney College Hybrid Student Success

	Term 2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
Success%	60.54%	58.81%	68.39%	68.33%	58.44%	55.12%	68.27%	62.05%	61.76%

- Are there differences in the course completion rates when disaggregated by age, gender, ethnicity or special population (current or former foster youth, students with disabilities, low income students, Veterans)? If so, please describe.

College course completion standard _____

Please insert the data chart here or complete the section below.

Department/discipline Hybrid course completion rates:

Course 1._____ _____
(course name and number) rate

Course 2. ._____ _____
(course name and number) rate

Course 3. ._____ _____
(course name and number) rate

ETC.

Discussion:

- Are there differences in course completion rates between face to face and Distance Education/hybrid courses? If so, how does the discipline, department or program deal with this situation?

  N/A

- How do you assess the overall effectiveness of Distance Education course?

  N/A

- Describe the discipline, department, or program retention rates *(*After the first census, the percent of students earning any grade but a "W" in a course or series of courses) for the past three years. How does the discipline, department, or program retention rate compare to the college retention standard?

LABST Retention

	Term								
	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
Retention%	100.00%	93.71%	89.98%	100.00%	91.39%	91.67%	100.00%	83.64%	95.26%

Laney College Retention Standard

	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
Retention%	84.30%	83.71%	79.07%	84.20%	81.31%	79.46%	84.68%	81.53%	81.25%

- Are there differences in the retention rates when disaggregated by age, gender, ethnicity or special population (current or former foster youth, students with disabilities, low income students, Veterans)? If so, please describe.

  College retention standard _____

  Discipline, department, or program retention rates

  Year 1._____

Year 2._____

Year 3._____

Discussion:

- What has the discipline, department, or program done to improve course completion and retention rates? What is planned for the next three years?

  The department is planning to address this problem by implementing an assessment process before students can enroll in our classes. We are planning to provide in house tutoring to help our student to succeed. Also we are planning to offer some online courses and some day time classes to accommodate student needs.

- What has the discipline, department, or program done to improve the number of degrees and certificates awarded? Include the number of degrees and certificates awarded by year, for the past three years. What is planned for the next three years?

  We plan to acquire new equipment with the latest technology, update all our courses to meet the industry standards, create partnerships with industry and get the industry involved with the program, and offer some computer based online courses.

	2012-2013	2013-2014	2014- 2015	Total
Building Automation Systems (AS)		2	1	3
Commercial HVAC Systems (AS)	2	7	6	15
Refrigeration Technology (CP)	2	2	3	7
Residential and Light Commercial HVAC & R (AS)	3	3	5	11
Building Performance & Energy Efficiency (CA)	1			1
Residential and Light Commercial HVAC & R (CA)	16	35	13	64
Building Automation Systems (CA)		4	2	6
Commercial HVAC Systems (CA)	13	25	11	49

---

7. Human, Technological, and Physical Resources (including equipment and facilities):

- Describe your current level of staff, including full-time and part-time faculty, classified staff, and other categories of employment.

  Full-time faculty headcount _____2_____

  Part-time faculty headcount _____8_____

  Total FTEF faculty for the discipline, department, or program _____

  Full-time/part-time faculty ratio _____8:2_____

Classified staff headcount _____1 part-time _____

- Describe your current utilization of facilities and equipment.

  We are utilizing 90% of our facilities and equipment.

- What are your key staffing needs for the next three years? Why? Please provide evidence to support your request such as assessment data, student success data, enrollment data, recommendations from your advisory committee, changes in certification requirements, and/or other factors.

  One of the full time staff is planning to retire within the next year to two years and the department needs to start looking for a replacement as soon as possible.

  The department has grown to the point that it is in need of a permanent office assistant to assist with the everyday work that the department needs.

  The department is also in need of an instructional assistant to help especially during lab hours to help instructors and students to prevent any accidents that may occur. The department also needs tutorial services at night to help our students with Math and English needs.

- What are your key technological needs for the next three years? Why? Please provide evidence to support your request such as assessment data, student success data, enrollment data, recommendations from your advisory committee, changes in certification requirements, and/or other factors.

  Due to the expansion of the program, the two computer labs with thirty computers each, and the special software being used we need a full time IT person to service and maintain our computer labs. The current part-time IT person cannot keep up with demand since he is helping all the CTE programs. I very strongly recommend making it priority to hire a full-time IT person only for CTE programs. The department also needs new computers as the existing ones get older and outdated.

- What are your key facilities needs for the next three years? Why? Please provide evidence to support your request such as assessment data, student success data, enrollment data, recommendations from your advisory committee, changes in certification requirements, and/or other factors.

  1) Change the existing breakers, outlets, and wiring in room B150 and A191. The existing lab is very old and outdated and a very unsafe infrastructure.
     BIW breaker panel in B-150 five years ago the underground wires were shorted and created a fire hazard.

  2) The department needs access to some mechanical equipment rooms in the district where students along with their instructors can go in and use the equipment to collect and analyze data, and make recommendations to each college president.
  3) Partner with some government facilities for our students to be able to visit and study the different types of equipment and their use.
  4) Partner with industry to create internships for our students.

  .

- Please complete the Comprehensive Instructional Program Review Prioritized Resource Requests Template included in Appendix A.

---

8. Community, Institutional, and Professional Engagement and Partnerships:

Part A.

- Discuss how faculty and staff have engaged in institutional efforts such as committees, presentations, and departmental activities. Please list the committees that full-time faculty participate in.

  We had an industry advisory committee in spring semester 2015.

  Mr. Kyriakopedi participates in faculty senate as a CTE senator. He also participates in the Laney College CTE advisory committee.

  Mr. Kyriakopedi has been participating in 90% of the meetings with key players for the construction of the BEST Center buildings.

  Mr. Kyriakopedi has been working on the ceiling installation of the computer lab inside B150 and also the installation of the HVAC system for conditioning the space inside the computer lab.

  Mr. Kyriakopedi is also working for the installation of the three exhaust fans in room B150 for the fumes being created when we teach brazing and soldering practices.

  Mr. Kyriakopedi also participated in the annual NSF conference in Washington, DC and BEST Center conferences in Milwaukee, Atlanta, and Oakland.

  Mr. Frost as a part time faculty participated in BEST Center conference in New Mexico and Oakland, California.

  Mr. Hartshorn as a part time faculty also participated in BEST Center conference in Atlanta, Georgia.

  Mr. Rosillo is participating in the facilities committee for Laney College and district wide.

  Mr. Rosillo participated on revising the program learning outcomes (PLO's).

  Mr. Rosillo has also been working on the building automation lab, installing, developing curriculum for the control courses.

- Discuss how faculty and staff have engaged in community activities, partnerships and/or collaborations.

Mr. Kyriakopedi has taken his installation class twice to install residential HVAC equipment and duct work for the Habitat for Humanity.

For the last three years Mr. Kyriakopedi has been taking his HVAC troubleshooting class ECT 17 to PGE energy center in Stockton, California for combustion safety and Title 24 duct blast and blower door testing.

Every year we have students from Skyline High School in Oakland, California the Physics of Energy Science class come to Laney College to participate in a one day introduction to energy efficiency and advanced lighting controls.

For the last three years Mr. Hartshorn has been teaching the "Physics for Building Sciences" course for the BEST Center grant for high school students.

- Discuss how adjunct faculty members are included in departmental training, discussions, and decision-making.

  We have at least three to four departmental meetings every year to discuss department needs such as updating curriculum, course outlines, SLO's and PLO's, lab equipment, and controls.

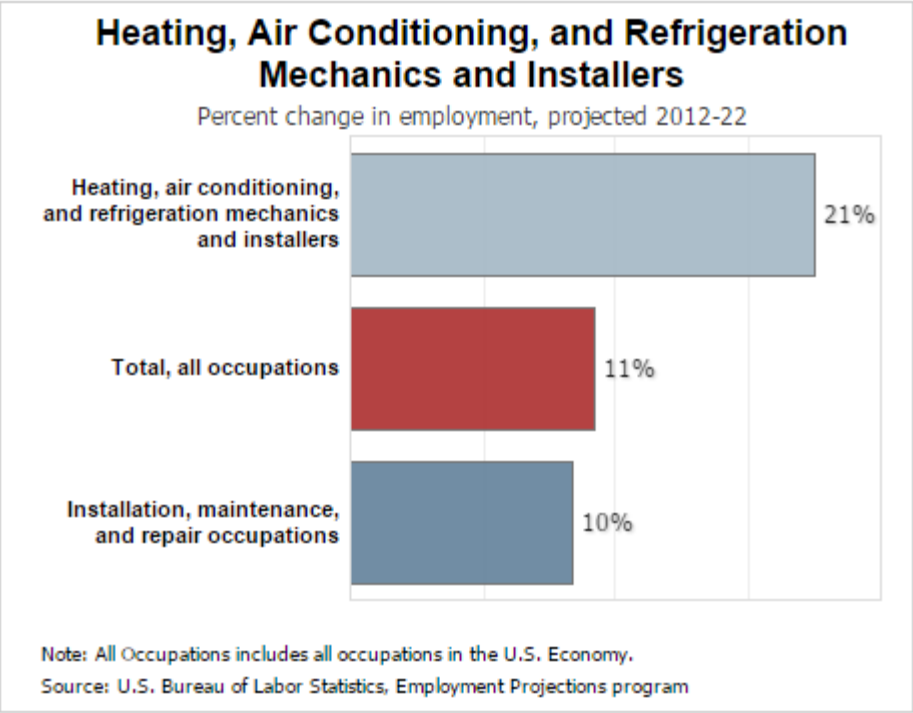
Part B.

- What are the job placement rates for your discipline/department/program for the past three years?

  Our job rate placement is considered high since most of our students get placed in different fields.

  Please note the Dean's office has the latest placement list from our department if you need more information contact Nick Kyriakopedi in the ECT department at (510) 464-3292.

- What are the projected job openings in your discipline for the next three years?



Summary

Quick Facts: Heating, Air Conditioning, and Refrigeration Mechanics and Installers	
2012 Median Pay	$43,640 per year $20.98 per hour
Entry-Level Education	Postsecondary non-degree award
Work Experience in a Related Occupation	None
On-the-job Training	Long-term on-the-job training
Number of Jobs, 2012	267,600
Job Outlook, 2012-22	21% (Faster than average)
Employment Change, 2012-22	55,900

Similar Occupations

About this section

This table shows a list of occupations with job duties that are similar to those of heating, air conditioning, and refrigeration mechanics and installers.

	OCCUPATION	JOB DUTIES	ENTRY-LEVEL EDUCATION	2012 MEDIAN PAY
	Boilermakers	Boilermakers assemble, install, and repair boilers, closed vats, and other large vessels or containers that hold liquids and gases.	High school diploma or equivalent	$56,560
	Electricians	Electricians install and maintain electrical power, communications, lighting, and control systems in homes, businesses, and factories.	High school diploma or equivalent	$49,840
	Plumbers, Pipefitters, and Steamfitters	Plumbers, pipefitters, and steamfitters install and repair pipes that carry liquids or gases to and in businesses, homes, and factories.	High school diploma or equivalent	$49,140
	Sheet Metal Workers	Sheet metal workers fabricate or install products that are made from thin metal sheets, such as ducts used for heating and air conditioning.	High school diploma or equivalent	$43,290

<- Job Outlook More Info ->

SUGGESTED CITATION:

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2014-15 Edition*, Heating, Air Conditioning, and Refrigeration Mechanics and Installers, on the Internet at http://www.bls.gov/ooh/installation-maintenance-and-repair/heating-air-conditioning-and-refrigeration-mechanics-and-installers.htm (visited *August 11, 2015*).

ASHRAE Shaping Tomorrow's Built Environment Today

Reports Estimate Over 100,000 New HVACR Mechanics and Installers Needed In Next Seven Years Due To Growth and Retirements

Sep 22, 2015

Contact: Kari Arfstrom
Executive Director, HVACR Workforce Development Foundation
Direct: 703.465.1397

Contact: Jodi Scott
ASHRAE Public Relations
678-539-1140
jscott@ashrae.org

Arlington, VA – The HVACR Workforce Development Foundation released three new reports and accompanying executive summary today confirming that demand outstrips the supply of heating, ventilation, air conditioning and refrigeration employees. In particular, mechanics and installers are in critical shortage in most areas of the nation. ASHRAE is a member of the Foundation.

Due to the increased growth in the sector and the ongoing retirement of Baby Boomers, HVACR programs in technical and community colleges are not filling the seats available to meet the current and anticipated demand. HVACR employers are having a difficult time filling positions, especially for refrigeration and HVAC technicians, respectively 44 and 36 days longer than the national average of 29 days for similar positions.

"HVACR programs in the U.S. and Canada are seeking new students, whether you are a recent high school graduate, veteran or second-career adult," said Kari M. Arfstrom, executive director of the HVACR Foundation. "With HVACR certifications or an associate's degree, new employees can be assured of a solid middle class job that cannot be off shored, is high tech and offers better than average pay."

Almost half of all mechanics and installers will retire in the next decade according to the new research, but post-secondary HVACR programs are not filling the seats needed to support these jobs. The reports detail the opportunities available for HVACR workers and address the unique issues constraining the pipeline for these roles. Concluding the analysis of supply and demand is the introduction of a North American Plan to reduce the employment gap.

An executive summary of the three reports, *The HVACR Workforce: Demand Heats up as Supply Melts Away*, is available on the HVACR Foundation's websitewww.CareersinHVACR.org.

The summary is based on the three commissioned reports:

- *The Next Generation of HVACR Installers and Technicians: What instructors are saying and what needs to be done*, the first-ever survey of instructors in HVACR programs in U.S. and Canada.
- *Heating up: The Sweltering Demand for Heating, Ventilation, Air Conditioning, and Refrigeration Workers*, prepared by Burning Glass Technologies.
- *A Labour Market Investigation of the HVACR Sector in Canada*, by Prism Economics and Analysis.

About HVACR Workforce Development Foundation

The HVACR Workforce Development Foundation is dedicated to leading an industry effort to develop and promote educational projects, programs, and partnerships to attract committed and skilled employees to a career in HVACR. The Foundation's objectives are to raise the awareness of the HVACR industry and the importance it plays in daily lives; to create interest in the HVACR industry as an attractive and profitable career choice; and to enhance the quality and quantity of available workforce for the HVACR industry.

For more information, including the eight funding organizations, please visitwww.CareersinHVACR.org

- How is the discipline/department program responding with regard to labor market demand?

  The department has been very active in responding with latest industry changes to better prepare students with the latest technology, partnering with some key organizations such as Lawrence Berkley Lab, Pacific Northwest National Lab, Trane Company, Carrier Corporation, Automated Logic Controls, Siemens, Honeywell and more. We are also creating partnerships with California Conservation Core Division of California Energy Core, The Rising Sun, and some high schools in the bay area.

- Do you have an advisory board in place? Has it met regularly? Please provide a list of your advisory board members and attach agendas and meeting minutes from the past year.

  Yes, we do have an advisory board in place and we meet with them once every semester for approximately two hours.

Advisory Committee Spring 2015				
Last Name	**First Name**	**Company**	**Title**	**Email**
Berg	Michael	Honeywell		michael.berg4@honeywell.com
Briones	Bob	Able Services		bbriones@ableserve.com
Carlson	Erik	Able Services	Engineer Manager	erik.carlson@ableserve.com
Chapman	Connor	ASI Controls	Sales Consultant	connor.chapman@asicontrols.com
Eskildsen	Chip	Legacy Mechanical		
Gladney	Jason	Air Systems Inc.	Senior Director, BAS	jason.gladney@airsystemsinc.com
Mahoney	Terance	Siemens		terance.mahoney@siemens.com
Neil	Michael	Honeywell		michael.neil@honeywell.com
Ramirez	Pepe	Avalon Bay at Mission Bay North	General Maintenance Manager	pepe_ramirez@avalonbay.com
Saldana	Jesus	The Gateway	Chief Engineer	jsaldana@thegateway.com
Shepard	Stephen	BOMA Oakland/East Bay	Executive Director	stephen@bomaoeb.com
Stroupe	Ryan	PG&E	Building Performance Program Coordinator	r2s2@pge.com

- Please describe the number of activities and recommendations resulting from advisory committee meetings that have occurred in the past three years. What information was presented that required changes to be made to your program?

  Some of the recommendations were to include Title 24 in two of our courses ECT 18 and ECT 28.

  On the last advisory meeting some advisors raised the question about preventive maintenance, OSHA safety requirements and because of that we are in the process of creating and adding new courses in our program.

  Also one of the advisors raised the question of why we don't cover more details on indoor air quality, because of that we are planning to add another unit to make it into a two unit course.

- Does your program require state or national licensing? Please explain. What is your licensing status?

  Currently there are no licenses recognized at the State or National level for HVAC technicians or Building Operators. In 2014, two of our faculty Mr. Frost and Mr. Hartshorn participated in a DOE sponsored effort to develop national standards for the Credentialing of Building Operators. State efforts to develop standards for credentialing/certification are emerging, spearheaded by Utilities across the State. Laney is deeply involved in the emerging State efforts and will involve the CTE Deans, and some of the Instructors in an effort to develop State standards.

- Do your students participate in third party certifications? What are their success rates (include the # of students, # of certifications, etc.).

  Yes, some of our students take the NATE competency exam certification and EPA certification For NATE exam is 60% and for the EPA exam 80%

- Is your discipline/department/program working with a Deputy Sector Navigator? If so, in which sector? Briefly describe your discipline/department/program's work with the Deputy Sector Navigator.

  No

- In which ways is your discipline/department/program collaborating with other community colleges in the region? What similar programs exist in the surrounding area or nearby colleges?
  City College of San Francisco is developing a first year HVAC program that we've been collaborating on for the last two years for the development of their program.

  We have been collaborating with San Jose City College for the last eight years by exchanging curriculum ideas and information specifically on energy related topics and also we are collaborating on development of the new ECT program, and Facilities Maintenance Technician program.

  We are also collaborating through the NSF BEST Center grant with Georgia Piedmont Technical College and Milwaukee Area Technical College in energy efficiency and building automation control systems.

- Is your discipline/department/program currently participating in any grants? Please list and briefly describe the grant name, granting agency and the goals of the grant as it relates to your discipline/department/program.

Grant Name	**Granting Agency**	**Grant Goals**
BEST Center	NSF	Curriculum dissemination.
Prop 39	California Energy Commission	Develop curriculum for Energy Efficiency
MANEX	Department of Energy	Develop and teach a short term re-tuning practices.
CPT Grant	California Conservation Core Division of California Energy Core	To train Conservation Core students

---

9. Professional Development:

- Please describe the professional development needs of your discipline or department. Include specifics such as training in the use of classroom technology, use of online resources, instructional methods, cultural sensitivity, faculty mentoring, etc.

  Full time and part time instructors usually attend some district wide presentations during the professional days offered in the beginning of each semester. Also most instructors attend industry

seminars and professional organization seminars such as ASHREA Annual Conference, RSES, Annual Educators Conference given by ESCO Institute and others.

Most of our instructors also attend professional development given by Laney College such as, the use of technology, assessment process, curriculum development process, and other.

- How do you train instructors in the use of Distance Education platforms? Is this sufficient?

  Courses in the development and delivery of Distance Education Classes are taught at a sister school, Merritt College. The Peralta system uses Moodle for distance education classes, and at least one of our instructors has taken the initial classes in the preparation and delivery of on line courses.

  The department hasn't done any kind of training even though is planning to develop some distance education courses. The college also offers some professional development distance education classes to properly prepare instructors which some of our staff ha attend.

---

10. **Disciple, Department or Program Goals and Activities:**

- Briefly describe and discuss the discipline, department or program goals and activities for the next three years, including the rationale for setting these goals. NOTE: Progress in attaining these goals will be assessed in subsequent years through annual program updates (APUs).

  The department's goals are:
  1. Finish updating, deleting, adding courses and make course title and program changes.
  2. Create high school and organizational partnerships to better prepare students with basic skills.
  3. Complete the hydronic HVAC system and SIEMENS controls, commission the whole system, and develop lab projects, homework, quizzes, and exams for each student work station.
  4. Complete the Building Automation Program and develop lab projects, homework, quizzes, and exams for each student work station.
  5. Oversee the completion of the BEST Center buildings and their electrical and mechanical systems and controls.
  6. Acquire more lab area in order to build a clean room.
- Then fill out the goal setting template included in Appendix B. which aligns your discipline, department or program goals to the college mission statement and goals and the PCCD strategic goals and institutional objectives.

  (See Appendix B)

- **Goal 1. Curriculum:**

  Activities and Rationale:

  During the summer the department updated all the SLO's and PLO's and uploaded them on Curricunet.

The department currently is working on updating all the courses including the three programs that are being offered.

- **Goal 2. Assessment:**

  Activities and Rationale:

  The department has been assessing some of the courses and is working on having all the instructors complete their assessment for each course they teach.

- **Goal 3. Instruction:**

  Activities and Rationale:

  Many of our students work days and attend classes at night. Various suggestions have been made to allow students a greater say in how their time is spent, as motivation for taking and continuing the coursework. Shortening the curriculum is one option, and distance learning, which would allow some flexibility in the time of lecture content taken, is another possibility. The Department plans to investigate the use of Distance Learning components in the next couple of years. Over 80 % of the current class structure includes a laboratory component, making hybrid course delivery the most likely model for the department. Two of the classes that don't have a lab component, Indoor Air Quality and Energy Policy are being discussed for early consideration for conversion to a hybrid format. Moodle is the delivery platform of choice for the Peralta system.

- **Goal 4. Student Success and Student Equity:**

  Activities and Rationale:

- **Goal 5. Professional Development, Community, Institutional and Professional Engagement and Partnerships:**

  Activities and Rationale:

  Faculty regularly attends district wide development activities offered in the beginning of every semester including during summer some of our faculty attend conferences on their own. Also some faculty attends the HVAC Excellence offered once a year and other local part houses that offers some specialty seminars on equipment and controls.

  Faculty meets with community organizations to exchange ideas and to also market the program. Faculty meets with high school teachers and partners with professional organizations such as PG&E, Lawrence Berkeley National Lab, and Pacific Northwest National Laboratory.

  The department meets with the Industry Advisory Committee two times a year to discuss the current needs of the industry and we make adjustment to our curriculum according to their needs.

- Please complete the Comprehensive Instructional Program Review Integrated Goal Setting Template included in Appendix B.

Appendices

Appendix A

CTE Program Review
Prioritized Resource Requests Summary for Additional (New) Resources

College: Laney College

Discipline, Department or Program: Environmental Control Technology

Contact Person: Nick Kyriakopedi

Date: October 27, 2015

Resource Category	Description	Priority Ranking (1 – 5, etc.)	Estimated Cost	Justification (page # in the program review narrative report)
Human Resources: Faculty	Full time Instructor	1	?	See page 17
Human Resources: Classified	1 office assistant 1 instructional assistant	2 2	?	See page 17
Human Resources: Student Workers	2	1	$9,000	
Technology	4. new laptops 2. 50 inch LCD TV's	1 1	$900 $5,600	
Equipment	2 High efficiency condensing furnaces 2 High efficiency heat pumps 4 Commercial type refrigerators and freezers 12 PLC control modules	1 1 1 1	$6,000 $8,000 $43,000 $17,500	
Supplies	30 new computers 5 laptop computers	2 2		
Facilities	Build the BEST Center. Develop a clean room to teach clean room maintenance.	1 1		See page 26
Professional Development	Attend Mitsubishi multi city system class. Attend ASI Controls class. Attend ALC Controls class.			
Other (specify)				

Appendix B

PCCD Program Review
Alignment of Goals Template

College: Laney College

Discipline, Department or Program: Environmental Control Technology

Contact Person: Nick Kyriakopedi

Date: October 27, 2015

Discipline, Department or Program Goal	College Goal	PCCD Goal and Institutional Objective
1a. On an ongoing basis, survey employers for long term and short term expectations for employment. Use this industry information to periodically refine course(s) content and provide feedback to participating employers. **1b.** Develop the facilities maintenance technician certificate program and the energy efficiency program to address the current needs of energy use in facilities.	**Goal #1 Student Success** Develop new and strengthen existing interventions and strategies to increase students' access and success**.**	Advance Student Access, Equity, and Success
1a. Update all the course outlines, SLO's, PLO's and continue assessing the courses. 2b. Collaborate with industry to create a better pool of students that are looking to take the program and also start some online hybrid courses to cater students who otherwise cannot attend school on regular scheduled hours.	**Goal #2 Accreditation** Take the necessary actions to reaffirm Laney College's accreditation.	Engage and Leverage Partners
3. Our department will assess all existing course SLO's, PLO's, and course outlines by the next three years.	**Goal #3 Assessment:** Ensure completion of the Assessment cycle for SLOs and PLO,s	Build Programs of Distinction
4a. Partner the Facilities Dept. to ensure that the new BEST Center bldg.	**Goal #4 Resources** Increase, develop and manage	Strengthen Accountability, Innovation and Collaboration

will be a model for "Campus as a Living Lab" instructional programs. **4b.** Also, complete the hydronics system and controls in the ECT Lab, and the Bldg. Automation Lab.	the College's resource capacity in the areas of personnel, finances, facilities, technology and partnerships in order to advance the quality of education provided.	

Appendix C

Program Review Validation Form and Signature Page

College: Laney College

Discipline, Department or Program: Environmental Control Technology

Part I. Overall Assessment of the Program Review Report

Review Criteria	Comments: Explanation if the box is not checked
☐ 1. The narrative information is complete and all elements of the program review are addressed. ☐ 2. The analysis of data is thorough. ☐ 3. Conclusions and recommendations are well-substantiated and relate to the analysis of the data. ☐ 4. Discipline, department or program planning goals are articulated in the report. The goals address noted areas of concern. ☐ 5. The resource requests are connected to the discipline, department or program planning goals and are aligned to the college goals.	

Part II. Choose one of the Ratings Below and Follow the Instructions.

Rating	Instructions
1. Accepted. 2. Conditionally Accepted. 3. Not Accepted.	1. Complete the signatures below and submit to the Vice President of Instruction. 2. Provide commentary that indicates areas in the report that require improvement and return the report to the discipline, department or program chair with a timeline for resubmission to the validation chair. 3. Provide commentary that indicates areas in the report that require improvement and return the report to the discipline, department or program chair with instructions to revise. Notify the Dean and Vice President of Instruction of the non-accepted status.

Part III. Signatures

Validation Team Chair

Print Name	Signature	Date

Discipline, Department or Program Chai

Nick Kyriakopedi		**10-29-2015**
Print Name	Signature	Date

Received by Vice President of Instruction

Print Name	Signature	Date