Peralta Community College District

Berkeley City College
College of Alameda
Laney College
Merritt College

Instructional 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:

1. Ensure quality and excellence of academic programs.

2. Provide a standardized methodology for review of instructional areas.

3. Provide a mechanism for demonstrating continuous quality improvement, producing a foundation for action.

4. Identify effective and exemplary practices.

5. Strengthen planning and decision-making based upon current data.

6. Identify resource needs.

7. 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.

8. Inform integrated planning at all levels within the College and the District.

9. Ensure that educational programs reflect student needs, encourage student success, and foster improved teaching and learning.

10. Provide a baseline document for demonstration of continuous improvement and use as a reference for future annual program updates.

Components in the Process

The Comprehensive Instructional 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 Comprehensive Program Review process include:

1. The Comprehensive Instructional Program Review Team

2. Core data elements

3. Completion of a Comprehensive Instructional Program Review Narrative Report every three years

4. Validation of the Comprehensive Instructional Program Review Report

5. Completion of three reporting templates (found in the appendix). They are:

6. The C*omprehensive Instructional Program Review Resource Requests Template* in which to summarize key resource needs.

7. 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.

8. 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 Comprehensive Instructional Program Review, are completed in the alternate years within the Comprehensive Program Review three-year cycle.

Thus, the recommendations and priorities from the Comprehensive Instructional 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 Comprehensive Instructional 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:

1. Department Chair, Program Coordinator, or discipline designee.

2. Division Dean

3. Two additional faculty members.

4. All faculty members within a department are encouraged to participate in the comprehensive Instructional Program Review process, although participation is not mandatory.

5. A college body, such as a validation committee or institutional effectiveness committee, comprised of faculty outside of the discipline, department or program.

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

Validation: A designated college body, such as a validation committee or institutional effectiveness committee, will review the Comprehensive Instructional 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.

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.

1. Total enrollment data for each discipline, department or program (unduplicated) for the last three years disaggregated by age, gender, ethnicity and special populations.

2. Enrollment data for individual courses, by time of day, fall, spring and summer sessions, for the last three years.

3. FTES per FTEF (productivity) by course and discipline, department or program for the last three years.

4. College productivity rate for the last three years.

5. Degrees and certificates awarded, by discipline, department or program disaggregated by age, sex and ethnicity for the last three years.

6. Total degrees and certificates awarded by the college, per year, for the last three years.

7. Retention rates by course and discipline, department or program for the last three years.

8. Overall college retention rate.

9. Course completion (student success) rates, by course and discipline, department or program for the last three years.

10. College course completion rates for the last three years

11. Faculty Demographics: Full-time/part-time, age, gender, ethnicity

Part II. College

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

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

B. A list of degrees and certificates

2. 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.

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

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

   B. 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 Comprehensive Instructional Program Review Report

1. College: Laney

Discipline, Department or Program: Chemistry, Physics, and Astronomy

Date: 10/23/15 – first draft

Members of the Comprehensive Instructional Program Review Team:
Stephen Corlett, Michelle Fossum, Pinar Alscher, William Trego, N. Allen Nicol

Members of the Validation Team: ?

---

2. Narrative Description of the Discipline, Department or Program:

The Chemistry Department offers first- and second-year college-level chemistry courses for transfer and pre-medical requirements. We also offer introductory-level courses designed for allied health programs such as nursing and dental hygiene, and which provide support to the Biomanufacturing program – a joint venture between the Biology, Chemistry and Math departments. Our introductory-level classes prepare students for our transfer-level courses. Any of our courses can be used to satisfy a laboratory science general education requirement. Many of the students in our chemistry classes intend to pursue biology, biochemistry, nursing, medicine, pharmacology, or other health fields and most of them do this by participating in some type of transfer program. All of our classes count for credit at the CSU and UC level due to the articulation agreements we have in place.

The Physics department offers courses that provide a foundation for students transferring to four-year schools in engineering and in the physical and biological sciences, as well as courses that meet general education requirements. The physics 4A/4B/4C courses are a three semester calculus-based series for engineering and physical science majors. The physics 3A/3B courses are a two semester calculus-based series for biological and medical science majors. The physics 10 course is a general education survey course and is the only Physics course without a laboratory segment.

Introduction to Astronomy (ASTR 10) is the only course offered in this discipline at Laney.

The Chemistry and Physics departments currently do not offer degrees or certificates, however all of our classes can be used for the AA degree in Natural Sciences.

We require an additional full-time instructor in Chemistry and one in Physics to provide the quality education that students deserve. We seek to provide our students continuity in their educational experience. This is not possible with part-time faculty who, regardless of their commitment to students, do not have the guaranteed employment and are at risk of not being rehired when budgets are tight. The additional full-time instructors would also serve to share in the many aspects of running

the department and participating in shared governance on campus and within the district. Even though many (but not all) of our part-time faculty participate, they are under no contractual obligation to contribute in this fashion.

Along with the other core science disciplines (such as Biology and Physics) we need a new science building. Our current facilities are no longer adequate to meet the ever-increasing demands of the sciences with regard to safety and effectiveness. A new science building that would allow us to grow and be in close proximity to other science departments is needed. This would allow better coordination between science departments and would allow us to easily share our resources.

3. Curriculum

Please answer the following questions and/or insert your most recent curriculum review report (within the past 3 years) here.

Attach the Curriculum Review Report or Answer these Questions:

A. 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.

The entire core courses for Chemistry 1A, 1B, 30A, 30B, 12A, 12B, will be updated starting this fall, 2015. The Chemistry 1A and 1B instructors (Alscher, Fossum, Reyes, and Stavis) will be updating those courses Spring 2016. Chemistry 30A and 30B will be updated during the 2016-2017 academic year by instructors Alscher, Fossum, and Trego. Chemistry 12A and 12B will be updated during the 2017-2018 academic year by instructors Corlett and Trego. We use current textbooks (updated with new information at least every 3 years) to ensure our curriculum is up-to-date and reflects current pedagogy.

CRN	Title	PS	CNET	State
1A	General Chemistry	Active	Active	Active
1B	General Chemistry	Active	Active	Active
12A	Organic Chemistry	Active	Active	Active
12B	Organic Chemistry	Active	Active	Active
25	The Chemistry of Energy and Environmental Issues	Active	Active	Active
30A	Introductory General Chemistry	Active	Active	Active
30B	Introductory Organic and Biochemistry	Active	Active	Active
49	Independent Study	Active	Active	Active
248GA	Biotechnology Instrumentation	Inactive	Active	Active
248GB	248GB	Inactive	Active	Active
348GA	Study Skills in Chemistry	Active	Active	Active

CHEM 49 is an independent study shell, and is maintained for special projects for students that want to explore some aspect of chemistry, whether it is teaching or research. The department is considering a late start introductory chemistry class for underprepared students. The department is also working on a new course, quantitative analysis, Chemistry 200; Stephen Corlett is the point person for quantitative analysis. Even with a new full-time hire we are in

need of more full-time faculty to teach current courses, and to devote time and resources to the development of new courses.

Several of the classes that appear in prompt and CurricuNet need to be deactivated. CHEM 248GA, 238GB are experimental courses, CHEM 25 has not been taught for several semesters due to budget cuts, and Chemistry 86, a practice course used to navigate CurricuNet, will be deactivated. This will clean up CurricuNet and better reflect course material for our department in the catalog.

Since this is a Curriculum Review year, we will be looking at the course outlines to make sure that the curriculum is current. Although the state does not mandate percentage of material taught for the outline, percentages are a helpful guideline to ensure that students get the most out of the course. The lecture content will be mapped to assignments and SLOs during the program review cycle. Also, textbooks will be reviewed for currency.

During the last program review, we presented the district wide collection of data using an entrance exam for General Chemistry 1A. As previously stated, many students are not prepared for the class; it can be quite rigorous for the average student. Students might pass the math pre-requisite of algebra, but have poor skills with solving word problems, and navigating the pace of the class. We hope that a pre-requisite of Introductory Chemistry 30A, or testing to enter the class will give the average student a better chance at passing. As the data shows (see ***Figure 3.1*** at the end of this section), on average, students who received a score of 10 or better on the entrance exam passed the course (this score approximates a 65% or better overall grade, which is the limit for a passing grade in CHEM 1A).

This data does not include non-persistent students. Students withdraw for many reasons, from job and family responsibilities, poor language and study skills. Students are often underprepared for the rigors of a general chemistry class. A general chemistry student has weekly lab reports to write, 2 hours a week of assigned homework (and many more of unassigned preparation necessary for success in the class), vocabulary, and interpretation of integrated word problems.

Students are also poorly advised to take Chemistry 1A instead of the lower division class, Chemistry 30A or Chemistry 50, even though the program they are transferring to does not require the course. This is often coupled with students who enroll in chemistry with too many units, hoping to finish their course load and transfer to the four-year program.

Chemistry 30A and Chemistry 50 would prepare students for Chemistry 1A because the classes have similar math, lab, and reading requirements at a simpler and slower pace. Students become familiar with the concepts and requirements so they can transition into the upper level class smoothly.

On the first day of class, Chemistry 1A instructors advise students by passing out a handout "Are you in the right chemistry class?" The handout has guidelines to help students make an informed decision using two steps: **Step 1:** What kind of student are you? What are your goals? What is your previous exposure to chemistry? **Step 2:** Use the course description as a guideline to complete goals. We also give general advice. (See the end of this Section for Step

1, Step 2, and General Advice.) The withdrawal data reflects the four sister colleges, but District data shows that Laney has slightly lower overall withdrawal values for all of its chemistry classes than the other colleges.

Table 3.1 – Withdraw rates

	Alameda	Berkeley	Laney	Merritt
% Withdraw F11	0.31	0.29	0.25	0.26
% Withdraw F12	0.30	0.25	0.27	0.36
% Withdraw F13	0.33	0.32	0.29	0.35

(This data is not correlated to reasons for withdrawing)

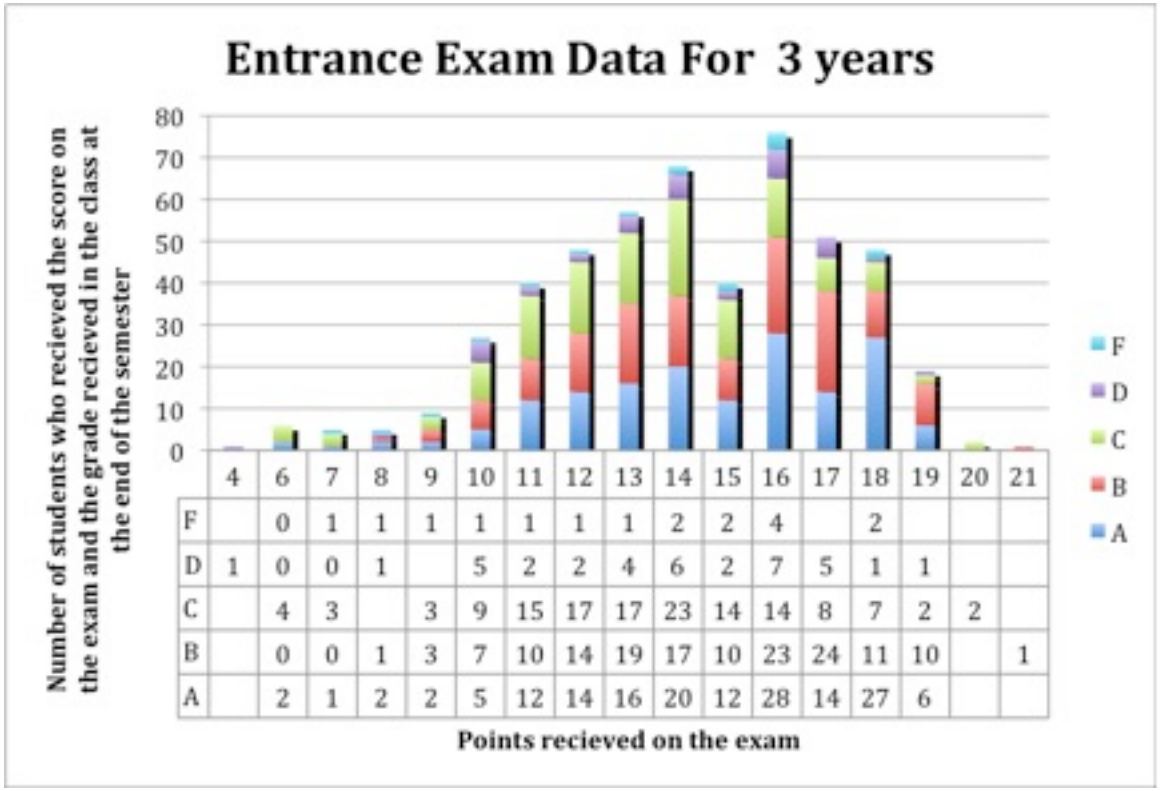
B. What are the discipline, department or program of study plans for curriculum improvement (i.e., courses or programs to be developed, enhanced, or deactivated)?

We have no programs at this time, but have talked of writing a pre-med course of study. It is not a program, more a course of study to prepare students who want to transfer to apply to a variety of graduate level medical programs.

C. 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?

We have no degrees or certificates. No chemistry, physics, or astronomy courses are offered through distance education. Chemistry is a course that is difficult to teach through distance education. Students learn chemistry by exploring concepts in the laboratory setting. In the lab, they study first hand how precision affects results, learn the importance of multiple trials, hone their observation skills, and use experimental data to perform calculations similar to those presented in lecture.

Figure 3.1 - Student passing grade compared to score on entrance exam. The graph suggests that students who receive a score of 10 or better (14 being the sweet spot) have a better chance of passing Chem 1A with a C or better.



	4	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
F		0	1	1	1	1	1	1	1	2	2	4		2			
D	1	0	0	1		5	2	2	4	6	2	7	5	1	1		
C		4	3		3	9	15	17	17	23	14	14	8	7	2	2	
B		0	0	1	3	7	10	14	19	17	10	23	24	11	10		1
A		2	1	2	2	5	12	14	16	20	12	28	14	27	6		

Step 1: What kind of student are you? What are your goals? What is your previous exposure to chemistry?

What type of student are you?	***You Should Take***
Never had Chemistry before	30A or 50;
Had Chemistry but forgot (within last 4 years)	30A or 50
Bio-manufacturing	30A (requirement for certificate)
Nursing, Allied Health	30A, maybe 30B
Pre-Med, Pre-Dental, Pre-pharmacy	1A, 1B, 12A, 12B (Note: 1A requires a strong math - background, and critical thinking skills)
Physical Therapy	1A, 1B
Physician Assistant (PA)	1A, maybe more
General Ed Science course	30A or 50 (don't try 1A)

Step 2: Use the descriptions below as guidelines to help you complete your goals.

Chemistry class	*Description*
CHEM 30A	This is an introductory Chemistry course. Introduction to Inorganic Chemistry has an allied health focus. This course is recommended for students who have never had a chemistry course and is designed for students interested in nursing or dental hygiene. It meets most prerequisites for these programs and is considered an introductory course in preparation for Chem 1A. CHEM 30A is not open for credit to students who have already completed CHEM 1A. The course is not as math intensive as CHEM 1A/B, though elementary algebra is required. The labs are less intense and do not require as much writing as CHEM 1A/B
CHEM 30B	Introduction to Organic Chemistry and Biochemistry, like CHEM 30A, has an allied health focus. Required by some nursing schools, the complete sequence 30A/B provides a comprehensive overview of General, Organic and Biochemistry. Note that CHEM 1A can serve as a prerequisite to 30B, as well as CHEM 30A.
CHEM 50	Beginning Chemistry. Similar topics to CHEM 30A with more math and problem solving emphasis. Preparatory course for CHEM 1A. Recommended for students who would like to refresh their memory, have never had a chemistry course, are preparing for a science degree, or wish to experience the joy of college chemistry class. (At Laney, this class is currently only taught during the summer months, primarily to HS students and is currently under consideration to not be offered in the future, but to only offer CHEM 30A)
CHEM 1A	THIS COURSE IS NOT CONSIDERED AN INTRODUCTORY CHEMISTRY CLASS! First semester of the year-long course General Chemistry, which is 1st year college chemistry. The course has a heavy workload in math, writing, and critical thinking; there is a strong expectation of previous exposure to chemistry. Currently, 50 percent of students who start 1A either withdraw or receive a non-passing grade because they are underprepared for the rigors of the class. Students entering 1A are expected to take 1B.
CHEM 1B	Second semester of General Chemistry. Same workload as 1A, with math, writing, and critical thinking.
CHEM 12A/B	Organic Chemistry. 2nd year college chemistry (aka sophomore chemistry). Heavy workload in theory and practice of organic chemistry. Laboratory portion requires large time commitment. Should not be attempted without a solid year of General Chemistry. (Chem 30A/B does not fulfill the prerequisite for this class)

General Advice

1. Students **<u>should not</u>** take 2 chemistry classes at once!
   e.g. Do not take CHEM 1A (prereq for 1B) and 1B at the same time
   Do not take CHEM 1B (prereq for 12A) and 12A at the same time
   Many students attempt to do this to "save" time. It rarely works and usually, in the end, takes more time. Please do not send students to the instructor with this type of request.
2. Many students who attempt three (3) or more science classes with labs have an extremely difficult time in our Chemistry courses and often end up dropping one or more of them to stay afloat.
3. Please don't advise students to ask instructors to bend/break rules for them, such as (a) requesting of faculty to give incompletes instead of non-passing grades when they should simply withdraw or (b) requesting of an instructor that their non-desirable passing grade be lowered to a non-passing grade so that they can try again for a better grade (both of these have happened more than once)
4. Students should finish prerequisite math before entering in a chemistry course. Do not attempt concurrent enrollment in the prerequisite math and chemistry class.

4. Assessment

Please respond to the following items 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.

A. 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)

Every course syllabus for every instructor in the department includes the official, approved student learning outcomes (SLOs) for the class.

SLOs for chemistry department courses are also shown on the chemistry department website. http://www.laney.edu/wp/chemistry/chemistry-department/student-learning-outcomes/

Physics SLOs are found on the Physics department website. http://www.laney.edu/wp/physics/about/student-learning-outcomes-slos/

Astronomy SLOs are found here: http://www.laney.edu/wp/astronomy/

We do not offer any degrees in Chemistry or Physics, so there are no PLOs in the catalog.

B. 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.

As a result of an assessment of lab safety in CHEM 30A in Fall 2014 (in the 2014-2015 Assessment Cycle), the department discussed and developed "Safety Citation" cards. These are printed on red paper, and we sometimes call them "red cards." Because safety guidelines were not being emphasized with equal rigor in all classes, we decided to give anyone the power to point out when students or teachers were violating safety guidelines. Any teacher or laboratory technician is encouraged to fill out a "red card" when they see any student, teacher or lab technician not wearing eye protection, having food or drinks visible in lab, eating or drinking in lab, not wearing clothing that covers the feet and legs, etc.

For example, one of the lab technicians issued a safety citation to a Summer CHEM 30A student for wearing open toed shoes. In response, the instructor reminded that entire class in lecture of the policy concerning footwear and reminded them that they would be not be permitted to work in lab if they do not come with appropriate footwear.

Another instructor announces to the students that if they receive a safety citation, they lose points for the lab. Depending on the severity of the infraction, they could lose up to 20 points. This instructor finds that the students are reminding each other about lab safety so as not to get a citation.

Next steps:

1. Check to make sure that all instructors know about the Safety Citations and know how they are used. Consider a survey for collecting this information.

2. Remind instructors about the Safety Citations at the beginning of every semester.

3. Collect data on how many citations are issued in different classes, along with the nature of the violation.

Improvement 2.

As a response to the CHEM 30A Action Plan for 2013-2014, chemistry department guidelines have been developed. We found that when we were doing common assessments, there was sometimes a wide variation in student performance in different sections. We wanted to make sure that our classes are consistent with each other, no matter who the instructor is. We wrote general guidelines for lecture instructors and for lab instructors. We also wrote a set of guidelines for CHEM 1A/1B and 30A. These mention which topics should be covered and which can be skipped. They also contain guidelines about the expected level of rigor of the class.

In Fall 2015, in order to make sure that instructors were reading the guidelines, an acknowledgement form was developed and distributed. This form asks instructors to read the course outline and agree to cover all of the material in the course outline. It also asks them to read the guidelines and standards developed by the department. Instructors have to sign the form, confirming that they have read the course outline and the guidelines for chemistry instructors, and submit it to the department chair.

Next steps:

1. Every semester, remind instructors about the teaching guidelines, and continue requiring them to sign the acknowledgement form.

2. Consider posting the guidelines somewhere visible in the offices so that instructors will notice them or be reminded of them often.

Improvement 3.

A few instructors in the department got started working on the circular reasoning/improving explanations project. (CHEM 1B Action Plan and status report 2013-2014, CHEM 1A Action Plan and Status report 2014-2015)

Some of us noticed that when students answer questions that require explanations, many of them don't do very well. We wanted to undertake a department-wide project on improving student answers to explanation problems. This might be a long-term project.

We have accomplished the following so far: we located examples online of how to answer essay/explanation problems. Some of us have created handouts or drafts of handouts to give our students that explain specifically how to give a high-quality answer to test questions involving explanations.

Next steps:

1. This semester, have instructors assess how students do on explanation questions, and note what the main issues are with student results.

2. This semester, have instructors collect examples of good and bad student answers in order to examine and critique them with the class.

3. Create completed handouts of our own that explain what we want to see for explanation questions. Have instructors spend time talking about this in class. Assess their explanations again later in the semester or next semester. See if there is an improvement in the results.

C. 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.

Improving Explanations/Circular reasoning project – we would like the whole department to work on this.
(CHEM 1A 2014-2015 Assessment cycle)

Everyone (all instructors):
Collect some examples of good and bad answers to explanation questions. Include comments to indicate what's good and bad about each of the examples.
Collect ideas for advice to give to students when answering essay questions/explanation questions.
Collect preliminary data – how do students perform on questions involving explanations? What are the problem areas?

We could evaluate:
1. Content of their answer
2. Clarity, organization and logic of explanation

Improvement Plan: (we can start doing these things now)

1. Create a handout or a set of handouts for students that explain how to answer essay questions/explanation questions.

2. Create a handout that shows examples of actual student answers along with a critique of each example. (Maybe these examples should be specific to each instructor and course?) This could be combined with the handout described above, or it could be separate.

3. Set aside time in class to discuss the importance of high-quality answers to explanation problems and to discuss with students how they can go about improving their explanations.

4. Assess their explanations again, later in the semester (or in a subsequent semester). Use the same or a similar rubric. See if there is an improvement. Are there any areas where student performance is still weak? Collect that assessment information, along with the number of students making each mistake.

We are looking for evidence that the improvements we implement actually make a positive difference in student learning.

For the future:

1. For new and current instructors, offer examples of handouts on how to answer essay/explanation questions effectively. The new people will be able to use and modify a handout for use in their class.

2. Update the teaching guidelines and possibly the course outlines to include a requirement or strong recommendation that instructors specifically discuss how to answer explanation questions in their classes.

Plan 2.

We plan to develop guidelines and standards for CHEM 12A, 12B, and 30B, so that all of our chemistry courses have information and guidance for new instructors. This will help us be consistent. (CHEM 30B Action plan 2014-2015)

The physics FT instructor will develop teaching guidelines and standards for Physics and Astronomy classes.

Plan 3.

Improve Evaluation of Results in lab reports

In Spring 2015, Reyes and Alscher assessed the evaluation of results section of a lab report, and found that it was weak. In Spring 2015, they collected evaluations from Expt. 20. These are stored in Turnitin. (CHEM 1A 2015-2016 assessment cycle)

Other instructors have also found that the Evaluation of Results section of lab reports is the most problematic section. It asks students to go beyond what is in the lab manual. Students are supposed to come up with ideas of errors that could affect their results, and analyze whether each error would make their calculated results higher or lower than they should be and explain why clearly.

Action plan:

1. Collect handouts from different Chem 1A and 1B instructors, and compare how each instructor explains what they want in the evaluation section of the lab report. Collaborate to determine the best way of explaining what we want.

2. Collaborate to find a way to give students feedback that they can really use to be more successful.

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

There are no distance education courses in Chemistry, Physics, or Astronomy.

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

Assessment results are often different for different sections/instructors. We try to use a consistent assessment method whenever we assess multiple sections, but sometimes this doesn't quite work out. When we do have consistent assessment methods, the assessment results vary. This could indicate that certain instructors emphasized things more than others. It doesn't necessarily mean that, though. It could also be a random fluctuation in the preparedness or motivation of the students in a class. (Sometimes you have a class with lots of hardworking students, and sometimes you don't.)

This is one reason that we have developed a set of guidelines for instructors. We want to make sure there is some consistency in terms of content, level of rigor, and laboratory time. One thing we should definitely do is make sure instructors know what they are expected to cover and to what degree. Putting it in writing is a first, essential step. Another step is to make sure they read the information.

In some cases, the assessment results entered are the results from only one section. Sometimes an instructor wants to capture some assessment data for their own class. It might be something they are working on and testing with their students. This should be encouraged as a supplement to collaborative assessments that involve more than one instructor. These are projects that start small and might turn in to larger improvement projects within the department.

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

In Fall 2014, both sections of CHEM 12A assessed ILO 1 (Communication) as part of the college-wide ILO 1 assessment effort. A lab report was assessed in these classes. The results were submitted using the ILO 1 Writing rubric.

In Spring 2014, one section of Chemistry 1A participated in the college-wide assessment of ILO 4, Global Awareness. This is described in the 2013-2014 Assessment Plan and Assessment Findings for CHEM 1A in TaskStream.

In addition, all of the chemistry, physics, and astronomy classes are mapped to ILOs. This means that when we assess the SLOs that map to ILOs, we are also assessing ILOs at the same time.

We plan to assess ILO 2 (Critical Thinking and Problem Solving) in all of our courses during the 2015-2016 academic year.

G. 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.

All Chemistry and Physics courses are mapped to at least one of the institutional level outcomes (ILOs). The most relevant ILO is "Critical Thinking and Problem Solving". All chemistry, physics, and astronomy courses focus extensively on problem solving and all of them are mapped to this ILO.

The second-most relevant ILO is "Communication." Ten out of thirteen of the chemistry, physics, and astronomy classes are mapped to the Communication ILO. This is because many of our courses require students to write lab reports.

Four out of thirteen courses are mapped to "Career Technical Skills," two are mapped to "Global Awareness," and one is mapped to "Personal and Professional Development."

When we update our course outlines in CurricUNET, there is a new requirement that everyone will have to complete. Each of our course SLOs will list the specific assignments that are related to the SLO. Each course will have SLOs mapped to either PLOs or ILOs in CurricUNET.

5. Instruction

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

One of our instructors uses the concept of "flipping the classroom" to instill learning skills – students take on a greater responsibility in the course with tasks that they need to accomplish and the present to the rest of the class. Other strategies involve encouraging peer review of assignments during class and participation of students in the Laney Chemistry tutoring program.

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

Most chemistry, physics, and astronomy classes are now held in Smart Classrooms – for those rooms that are not yet equipped the school has now provided SmartCarts with the same type of technology, but on a cart. We can now easily show PowerPoint presentations and images from our textbooks. We can also now easily show students resources from the Internet, such as our class websites, ptable.com, YouTube videos, and Google searches. The smart classrooms and smart carts have been invaluable.

C. 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 (DE) courses?

The department maintains current curriculum for each course, and each faculty member is informed and has access to the course outline of record (COR).

In Chemistry, we offer suggested teaching guidelines to all instructors regarding testing, assigning of problems and minimum numbers of laboratory experiments. We are confident that these guidelines represent our efforts to maintain consistency and high standards among all sections of the same courses. Currently, these guidelines have been written for CHEM 30A, and CHEM 1A/B. Draft versions of the guidelines for CHEM 30B and CHEM 12A/B are in progress. In physics, draft version of guidelines for PHYS 3A/B/C and for PHYS 4A/B/C are in progress.

ASTR/CHEM/PHYS do not currently have hybrid or distance education courses or classes

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

ASTR/CHEM/PHYS do not currently have hybrid or distance education courses or classes

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

1. Overall (census) enrollment trends in the past three years.

See ***Table 5.1 – Census Enrollment by Discipline*** at the end of this section.

As seen in the table, our enrollment has been relatively constant over the past three years, with a slight drop in the chemistry enrollment over the past two years. The hiring of a new full-time faculty member at Berkeley City College in 2013 has had a noticeable effect on our enrollment, particularly in the area of CHEM 12A/B. We anticipate that the expanded capacity will eventually fill with students.

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

Student demand for all chemistry and physics courses remains high. We are teaching near the capacity of our current working environment and are limited by the laboratory space with regard to drawers, hoods, and bench space.

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

See Table 5.2 – Productivity by Discipline and Table 5.3 – Productivity by Course

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

The productivity of our chemistry or physics courses nearly doubles when we offer two laboratory sections with any master lecture section. If a course only has one associated laboratory section, then the productivity is necessarily lower. This leads to substantial variation in the reported productivities seen in the last three years' of data. When our chemistry and physics courses are taught with two laboratory sections the apparent productivity in the laboratory class is approximately one-half of the total, since two laboratory instructors are usually required. In physics, the productivity for our courses is generally higher than the school's average, since double laboratory sections are offered for most of the courses. Only the PHYS 10 and ASTR 10 courses do not have laboratory components, but both have higher enrollment maximums and are popular courses overall, so their productivity is much higher than the school average.

One ever-present issue with calculating the productivity is the use of an absolute class size to compare across the board. In the Chemistry department, we have set standards with regard to size of classes based on safety concerns in the laboratories. All of our introductory and general chemistry classes are capped at 25 students. For organic chemistry the maximum enrollment in each lab section is 20 students. These limits are based on National Fire Prevention Association (NFPA) fire and safety standards and are recognized by the American Chemical Society as the best compromise between efficiency (productivity) and safety. In physics, last year we lowered the capacity enrollment from all laboratory sections from 40 to 30 students, both for safety reasons and to provide for a more manageable class.

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

Yes. Since our courses nearly always fill to capacity (most are filled soon after open enrollment begins) they must be meeting student needs and demand. We offer classes in the daytime, in the evenings, and on Saturdays. Laney is one of the only schools in the Bay Area offer Chemistry 1B, 12A, and 12B in the evenings.

In addition, CHEM 1A, 1B, 12A, and 12B courses are scheduled so as to eliminate conflicts between class times for Chemistry, Biology and Physics classes. The Chemistry department consults with the other science departments at Laney to make sure that our required classes don't conflict with each other. This helps ensure that students will be able to take all of the classes they need without unnecessary delays. We also coordinate with other departments like Biology to make sure that we have courses available for students that are in special programs, such as Biomanufacturing.

All Physics courses are scheduled with other classes in mind, especially Math.

.

H. Recommendations and priorities.

1. Offer more sections of all of our classes, especially the high demand courses in chemistry and physics – CHEM 1A, CHEM 30A, PHYS 3A and PHYS 4A. – need more space to do this.

2. Find and hire more qualified instructors for chemistry and physics.

3. Maintain better coordination with other schools in the district for enrollment management.

Data for Section 5

TABLE 5.1 – Census Enrollment by Discipline

Census Enrollment (headcount)	Term								
Discipline	2012 SUMMER	2012 FALL	2013 SPRING	2013 SUMMER	2013 FALL	2014 SPRING	2014 SUMMER	2014 FALL	2015 SPRING
ASTR	-	48	NA	-	43	39	-	47	36
CHEM	105	462	475	134	451	467	154	432	420
PHYS	85	274	207	96	262	234	72	296	247

TABLE 5.2 – Productivity by Discipline

Productivity	Term								
Discipline	2012 SUMMER	2012 FALL	2013 SPRING	2013 SUMMER	2013 FALL	2014 SPRING	2014 SUMMER	2014 FALL	2015 SPRING
ASTR	21.77	17.19	17.70	18.27	17.17	17.08	21.40	15.54	16.62
CHEM	21.77	16.99	17.70	18.27	17.04	17.01	21.40	15.33	16.58
PHYS	21.26	26.85	24.27	23.96	21.91	21.48	18.02	23.26	23.80
Laney	16.76	17.63	17.41	16.40	16.53	16.48	15.05	15.40	15.41

TABLE 5.3 – Productivity by Course

Productivity	Term								
Course	2012 SUMMER	2012 FALL	2013 SPRING	2013 SUMMER	2013 FALL	2014 SPRING	2014 SUMMER	2014 FALL	2015 SPRING
ASTR 10 - DESCRIPTIVE ASTRONOMY	NA	24.00	NA	NA	21.50	19.50	NA	23.50	18.00
CHEM 12A - ORGANIC CHEMISTRY	NA	14.29	14.64	NA	14.00	12.69	NA	13.18	12.69
CHEM 12B - ORGANIC CHEMISTRY	NA	9.23	12.12	NA	9.81	12.12	NA	4.62	10.38
CHEM 1A - GENERAL CHEMISTRY	23.54	21.00	22.05	17.64	22.80	19.95	24.81	23.10	22.29
CHEM 1B - GENERAL CHEMISTRY	NA	17.92	17.90	18.43	16.67	20.86	19.78	12.50	18.98
CHEM 30A - INTRO GENERAL CHEM	19.31	16.32	17.83	18.92	15.22	16.00	18.93	14.69	16.25
CHEM 30B - INTRO ORGAN/BIOCHEM	NA	16.15	16.67	NA	15.77	14.44	NA	10.00	13.33
PHYS 10 - INTRO TO PHYSICS	21.26	23.00	18.00	23.96	17.00	12.00	18.02	18.00	18.50
PHYS 3A - GENERAL PHYSICS	NA	26.65	NA	NA	25.06	NA	NA	24.66	NA
PHYS 3B - GENERAL PHYSICS	NA	NA	15.91	NA	NA	17.10	NA	NA	13.67
PHYS 4A - GEN PHYSICS W/CALCULUS	NA	39.89	21.87	NA	26.73	20.95	NA	26.84	20.26
PHYS 4B - GEN PHYSICS W/CALCULUS	NA	16.40	37.23	NA	12.03	31.09	NA	17.10	39.68
PHYS 4C - GEN PHYSICS W/CALCULUS	NA	20.81	NA	NA	19.12	NA	NA	24.61	NA

6. Student Success and Student Equity

(Note: in all places where the handbook mentions completion rates, we have interpreted as Success rates)

A. Describe course success (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.

Refer to ***Table 6.1 – Success (Completion) Rates by Course and for Laney College*** at end of this section for this data and all other data for this Section.

How do the discipline, department, or program course success (completion) rates compare to the college course success (completion) standard?

Most of our success rates are at or better than the college standard. Some highlighted in yellow are of concern. The most challenging area is with our CHEM 1A/1B sequence – this is a very difficult course and many students are underprepared for it. We are currently instituting a prerequisite for this class – either successful completion of CHEM 30A (or CHEM 50), or a passing score on an entrance exam. We have tried for many years to address this issue – primarily the cause appears to be that very many student are unprepared for the class, due to insufficient background or being ill-advised to take the course, when an introductory course might just as easily satisfy their educational plan.

Another area that needs addressing is the PHYS 4A/B/C sequence. The PHYS 4A and 4B are both very challenging courses, like CHEM 1A/B. Students are likely entering these classes underprepared for the rigorous program and may lack the math background needed for these courses (like calculus). We are considering instituting an entrance exam for PHYS 4A to address this. We need to start in Spring 2016 by administering a trial entrance exam and collecting students' corresponding final grade in the class to see if there is a significant correlation of their background to their success in the class.

Two of our physics courses in the past year experienced an >90% success rate. Although we would enjoy such a high success rate as a measure of excellence, in one case we questioned whether students in the class were held to the high standards that we expect for the class. And in this case, further investigation has led to staffing changes since the instructor did not meet our expectations of maintaining high standards.

B. Are there differences in the course success (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.

See:
Table 6.2 – Success by Age – All Laney Students
Table 6.3 – Success by Age by Course. Summer 2012-Spring 2015
Table 6.4 – Census Enrollment (Headcount) by Age by Course. Summer 2012-Spring 2015

Table 6.5 – Success by Gender by Course. Summer 2012-Spring 2015
Table 6.6 – Census Enrollment (Headcount) by Gender by Course – Summer 2012-Spring 2015

Table 6.7 – Success by Ethnicity by Course. Summer 2012-Spring2015
Table 6.8 – Census Enrollment (Headcount) by Ethnicity by Course. Summer 2012-Spring 2015
Table 6.9 – Census Enrollment (Headcount) by Ethnicity by Discipline. Summer 2012-Spring 2015

Table 6.10 – Success of Foster Youth Students by Discipline and for Laney College
Table 6.11 – Success of Low Income Students by Discipline and for Laney College
Table 6.12 – Success of Veterans by Discipline and for Laney College

There are differences, but mostly students in these groups do as well or better than the average Laney population. In many cases much better than the norm.

As for data regarding students with disabilities, none of the information provided by the district contains anything specific to any of the disciplines at Laney (or the other colleges).

Discussion: This is the first time that the department has had access to this type of data. It is informative, but not sure where we provide input into altering any trends seen in this data. The data is hard to interpret as it currently provided. It is difficult to isolate where there are places to concentrate on improving. The data appear to suggest that everyone is very successful in every course, when we can clearly see from the aggregate success rate data for the overall class that in some classes there are areas of concern.

D. Describe course retention (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?

Not Applicable – no DE courses

E. Are there differences in the course retention (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.

Not applicable – no DE courses

College course completion standard _____N/A_____

Not applicable – no DE courses

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

Not applicable – no DE courses

Discussion:

Not applicable – no DE courses

F. Describe course retention (completion) rates in the department for Hybrid courses 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?

Not applicable – no hybrid courses

G. Are there differences in the course retention (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.

Not applicable – no hybrid courses

College course completion standard _____N/A_____

Not applicable – no hybrid courses

Discussion:

Not applicable – no hybrid courses

H. Are there differences in course retention (completion) rates between face to face and Distance Education/hybrid courses? If so, how does the discipline, department or program deal with this situation? How do you assess the overall effectiveness of Distance Education/hybrid course?

Not Applicable – no DE courses

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

Table 6.13 – Retention Rates by Course and for Laney
Table 6.14 – Retention Rates by Discipline and for Laney

J. Are there differences in the retention 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.

No data for the retention rates for these groups shown for discipline or courses was provided by the District.

College retention standard ____N/A_____

Tables, discipline, department, or program retention rates . Need more here…

Discussion: Still need something here

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

1. We are in the process of adding the prerequisite of CHEM 30A (or CHEM 50), or passing of an entrance exam for CHEM 1A – See curriculum section for discussion on this.

2. We are completing the series of teaching guidelines to give to all instructors. Draft versions of these guidelines for CHEM 12A/B, CHEM 30B, and PHYS 3A/B/C and PHYS 4A/B/C are in progress.

L. 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?

The chemistry and physics departments do not have degrees or certificate programs. Both departments are in the process of implementing our AA-T degrees. One stumbling block to this is to reconcile the unit values placed on the courses that we teach versus the suggested value in the state recommended Transfer Model Curriculum (TMC) for each discipline. We are working with our articulation officer at Laney to reconcile this difference.

The chemistry department is considering adding a Pre-Med certificate program. The details are not yet worked out, but would be our response to an ever-increasing population of students entering pre-medical programs or transferring to programs to other medical fields

Success and Enrollment Data for Section 6

TABLE 6.1 – Success (Completion Rates) by Courses and for Laney College

Success rate	Term								
Course	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
ASTR 10 - DESCRIPTIVE ASTRONOMY	NA	73.33%	NA	NA	62.79%	48.72%	NA	42.55%	52.78%
CHEM 12A - ORGANIC CHEMISTRY	NA	87.76%	65.85%	NA	89.58%	59.09%	NA	67.39%	45.45%
CHEM 12B - ORGANIC CHEMISTRY	NA	62.50%	73.81%	NA	88.24%	78.57%	NA	62.50%	86.11%
CHEM 1A - GENERAL CHEMISTRY	47.27%	43.70%	52.05%	61.90%	49.34%	44.36%	43.86%	52.94%	49.53%
CHEM 1B - GENERAL CHEMISTRY	NA	63.41%	69.74%	88.64%	47.50%	75.28%	85.11%	47.27%	67.90%
CHEM 30A - INTRO GENERAL CHEM	89.80%	76.65%	70.91%	81.25%	56.86%	44.53%	91.67%	55.56%	64.62%
CHEM 30B - INTRO ORGAN/BIOCHEM	NA	60.98%	73.33%	NA	65.85%	75.00%	NA	57.69%	56.25%
PHYS 10 - INTRO TO PHYSICS	96.43%	84.44%	80.56%	75.00%	61.76%	83.33%	73.61%	61.11%	70.27%
PHYS 3A - GENERAL PHYSICS	NA	60.94%	NA	NA	77.78%	NA	NA	80.65%	NA
PHYS 3B - GENERAL PHYSICS	NA	NA	80.00%	NA	NA	97.67%	NA	NA	76.00%
PHYS 4A - GEN PHYSICS W/CALCULUS	NA	62.89%	37.50%	NA	70.00%	51.65%	NA	79.28%	39.77%
PHYS 4B - GEN PHYSICS W/CALCULUS	NA	60.00%	75.82%	NA	40.91%	80.26%	NA	32.56%	96.91%
PHYS 4C - GEN PHYSICS W/CALCULUS	NA	77.78%	NA	NA	85.29%	NA	NA	84.44%	NA
Laney Total	**74.07%**	**68.72%**	**66.34%**	**73.40%**	**66.34%**	**67.98%**	**72.79%**	**68.95%**	**69.11%**

TABLE 6.2 – Success by Age – All Laney College Students

Success	Term								
Laney, Age	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
Under 16	94.91%	97.59%	99.47%	93.17%	97.41%	98.91%	86.29%	95.21%	97.56%
16-18	83.06%	71.79%	69.41%	84.11%	67.54%	69.07%	81.99%	69.17%	72.23%
19-24	73.90%	63.97%	62.00%	72.96%	63.00%	65.09%	73.85%	65.98%	66.08%
25-29	70.26%	68.51%	67.57%	67.87%	65.80%	68.29%	70.09%	68.33%	68.77%
30-34	68.02%	72.74%	69.99%	72.64%	68.70%	69.16%	68.46%	70.99%	70.14%
35-54	70.73%	73.76%	70.18%	70.66%	70.19%	71.14%	67.49%	73.65%	73.49%
55-64	73.03%	72.34%	67.05%	70.04%	67.15%	68.54%	65.84%	68.58%	69.90%
65 & Above	79.55%	77.30%	73.54%	72.73%	76.90%	77.39%	72.37%	74.84%	76.12%

TABLE 6.3 – Success by Age by Course. Summer 2012 – Spring 2015

Success	Age group							
Course	Under 16	16-18	19-24	25-29	30-34	35-54	55-64	65 & Above
ASTR 10 - DESCRIPTIVE ASTRONOMY	0.00%	50.00%	57.36%	63.64%	61.54%	43.75%	0.00%	NA
CHEM 12A - ORGANIC CHEMISTRY	NA	80.00%	71.88%	77.08%	72.73%	71.43%	NA	NA
CHEM 12B - ORGANIC CHEMISTRY	NA	100.00%	73.81%	79.41%	86.21%	72.73%	NA	NA
CHEM 1A - GENERAL CHEMISTRY	NA	61.29%	44.15%	48.45%	67.53%	57.53%	100.00%	NA
CHEM 1B - GENERAL CHEMISTRY	NA	93.33%	67.16%	71.29%	70.91%	58.62%	50.00%	NA
CHEM 30A - INTRO GENERAL CHEM	87.50%	76.19%	62.84%	68.49%	66.15%	64.80%	27.27%	100.00%
CHEM 30B - INTRO ORGAN/BIOCHEM	NA	60.00%	61.29%	71.21%	68.42%	73.53%	NA	0.00%
CHEM 49 - I/S CHEMISTRY	NA	NA	100.00%	100.00%	NA	NA	NA	NA
PHYS 10 - INTRO TO PHYSICS	88.24%	83.87%	73.55%	73.17%	77.14%	84.78%	75.00%	0.00%
PHYS 3A - GENERAL PHYSICS	100.00%	NA	71.67%	78.38%	84.21%	45.45%	100.00%	NA
PHYS 3B - GENERAL PHYSICS	NA	NA	83.33%	89.66%	92.31%	100.00%	0.00%	NA
PHYS 4A - GEN PHYSICS W/CALCULUS	NA	72.00%	58.11%	65.35%	58.70%	60.00%	0.00%	NA
PHYS 4B - GEN PHYSICS W/CALCULUS	NA	66.67%	69.40%	83.33%	86.49%	72.22%	NA	NA
PHYS 4C - GEN PHYSICS W/CALCULUS	NA	100.00%	95.08%	79.31%	46.67%	75.00%	0.00%	NA

TABLE 6.4 – Census Enrollment (Headcount) by Age by Course. Summer 2012 – Spring 2015

Census Enrollment (headcount)	Age group							
Course	Under 16	16-18	19-24	25-29	30-34	35-54	55-64	65 & Above
ASTR 10 - DESCRIPTIVE ASTRONOMY	1	16	131	34	13	16	2	
CHEM 12A - ORGANIC CHEMISTRY		5	128	48	33	14		
CHEM 12B - ORGANIC CHEMISTRY		3	84	34	29	11		
CHEM 1A - GENERAL CHEMISTRY		62	578	196	78	74	1	
CHEM 1B - GENERAL CHEMISTRY		15	272	102	55	29	2	
CHEM 30A - INTRO GENERAL CHEM	8	63	404	239	132	125	11	1
CHEM 30B - INTRO ORGAN/BIOCHEM		5	124	67	38	34		1
PHYS 10 - INTRO TO PHYSICS	17	125	155	82	35	46	4	2
PHYS 3A - GENERAL PHYSICS	1		120	40	19	11	1	
PHYS 3B - GENERAL PHYSICS			60	29	13	5	1	
PHYS 4A - GEN PHYSICS W/CALCULUS		25	342	101	46	25	1	
PHYS 4B - GEN PHYSICS W/CALCULUS		6	232	66	37	18		
PHYS 4C - GEN PHYSICS W/CALCULUS		1	61	29	16	8	1	

TABLE 6.5 – Success by Gender by Course. Summer 2012 – Spring 2015

Success	Gender		
Course	Female	Male	Unknown
ASTR 10 - DESCRIPTIVE ASTRONOMY	53.61%	57.55%	71.43%
CHEM 12A - ORGANIC CHEMISTRY	69.29%	77.55%	100.00%
CHEM 12B - ORGANIC CHEMISTRY	71.43%	82.72%	100.00%
CHEM 1A - GENERAL CHEMISTRY	50.55%	47.47%	53.85%
CHEM 1B - GENERAL CHEMISTRY	69.84%	66.04%	100.00%
CHEM 30A - INTRO GENERAL CHEM	65.97%	64.95%	63.16%
CHEM 30B - INTRO ORGAN/BIOCHEM	69.32%	60.71%	50.00%
PHYS 10 - INTRO TO PHYSICS	80.36%	76.34%	68.75%
PHYS 3A - GENERAL PHYSICS	73.15%	72.73%	75.00%
PHYS 3B - GENERAL PHYSICS	86.36%	84.21%	100.00%
PHYS 4A - GEN PHYSICS W/CALCULUS	60.56%	60.00%	60.00%
PHYS 4B - GEN PHYSICS W/CALCULUS	80.72%	71.69%	75.00%
PHYS 4C - GEN PHYSICS W/CALCULUS	88.00%	81.82%	50.00%

TABLE 6.6 – Census Enrollment (Headcount) by Gender by Course. Summer 2012 – Spring 2015

Census Enrollment (Headcount)	Gender		
Course	Female	Male	Unknown
ASTR 10 - DESCRIPTIVE ASTRONOMY	99	107	7
CHEM 12A - ORGANIC CHEMISTRY	127	98	3
CHEM 12B - ORGANIC CHEMISTRY	77	81	3
CHEM 1A - GENERAL CHEMISTRY	456	520	13
CHEM 1B - GENERAL CHEMISTRY	254	212	9
CHEM 30A - INTRO GENERAL CHEM	671	293	19
CHEM 30B - INTRO ORGAN/BIOCHEM	176	85	8
PHYS 10 - INTRO TO PHYSICS	225	224	17
PHYS 3A - GENERAL PHYSICS	111	77	4
PHYS 3B - GENERAL PHYSICS	66	38	4
PHYS 4A - GEN PHYSICS W/CALCULUS	143	392	5
PHYS 4B - GEN PHYSICS W/CALCULUS	83	272	4
PHYS 4C - GEN PHYSICS W/CALCULUS	25	88	3

TABLE 6.7 – Success by Ethnicity by Course. Summer 2012 - Spring 2015

Success	Category									
Course	American Indian/Alaskan Native	Asian	Black/African American	Filipino	Hispanic	Other Non white	Pacific Islander	White Non Hispanic	Multiple	Unknown/Non Respondent
ASTR 10 - DESCRIPTIVE ASTRONOMY	NA	53.33%	50.85%	50.00%	52.94%	NA	50.00%	71.43%	57.50%	50.00%
CHEM 12A - ORGANIC CHEMISTRY	NA	75.51%	73.91%	50.00%	57.14%	100.00%	NA	85.71%	64.71%	52.94%
CHEM 12B - ORGANIC CHEMISTRY	NA	77.78%	63.16%	66.67%	83.33%	NA	NA	84.62%	78.57%	75.00%
CHEM 1A - GENERAL CHEMISTRY	NA	51.96%	40.37%	33.33%	35.16%	0.00%	0.00%	59.59%	50.46%	51.02%
CHEM 1B - GENERAL CHEMISTRY	100.00%	71.88%	63.83%	69.23%	73.68%	NA	NA	68.81%	56.60%	70.00%
CHEM 30A - INTRO GENERAL CHEM	100.00%	79.70%	50.45%	67.65%	56.82%	66.67%	100.00%	73.53%	58.00%	62.79%
CHEM 30B - INTRO ORGAN/BIOCHEM	0.00%	71.91%	56.25%	61.11%	75.00%	100.00%	100.00%	68.52%	60.00%	60.00%
PHYS 10 - INTRO TO PHYSICS	100.00%	87.71%	62.16%	77.78%	68.33%	0.00%	100.00%	80.95%	70.83%	88.89%
PHYS 3A - GENERAL PHYSICS	NA	73.75%	52.94%	50.00%	63.16%	100.00%	NA	87.80%	70.59%	66.67%
PHYS 3B - GENERAL PHYSICS	NA	80.95%	66.67%	100.00%	100.00%	100.00%	NA	89.29%	87.50%	100.00%
PHYS 4A - GEN PHYSICS W/CALCULUS	NA	65.53%	61.11%	50.00%	36.23%	NA	NA	62.99%	63.04%	62.96%
PHYS 4B - GEN PHYSICS W/CALCULUS	NA	74.17%	80.00%	33.33%	71.43%	0.00%	NA	77.91%	75.00%	61.54%
PHYS 4C - GEN PHYSICS W/CALCULUS	NA	94.44%	80.00%	NA	70.00%	NA	NA	80.95%	50.00%	55.56%

TABLE 6.8 – Census Enrollment (Headcount) by Ethnicity by Course. Summer 2012-Spring 2015

Census Enrollment (Headcount)	Category									
Course	American Indian/Alaskan Native	Asian	Black/African American	Filipino	Hispanic	Other Non white	Pacific Islander	White Non Hispanic	Multiple	Unknown/Non Respondent
ASTR 10 - DESCRIPTIVE ASTRONOMY		30	60	4	34		2	35	42	6
CHEM 12A - ORGANIC CHEMISTRY		98	23	2	21	1		49	17	17
CHEM 12B - ORGANIC CHEMISTRY		72	19	3	6			39	14	8
CHEM 1A - GENERAL CHEMISTRY		361	112	30	130	1	3	194	109	49
CHEM 1B - GENERAL CHEMISTRY	1	193	47	13	39			109	53	20
CHEM 30A - INTRO GENERAL CHEM	3	271	220	34	134	4	2	172	100	43
CHEM 30B - INTRO ORGAN/BIOCHEM	2	89	48	18	20	1	1	55	25	10
CHEM 49 - I/S CHEMISTRY		3	1					1	3	
PHYS 10 - INTRO TO PHYSICS	1	180	75	18	60	1	2	63	48	18
PHYS 3A - GENERAL PHYSICS		81	17	2	20	1		42	17	12
PHYS 3B - GENERAL PHYSICS		42	9	3	11	1		28	8	6
PHYS 4A - GEN PHYSICS W/CALCULUS		206	55	8	70			128	46	27
PHYS 4B - GEN PHYSICS W/CALCULUS		151	35	3	28	2		86	28	26
PHYS 4C - GEN PHYSICS W/CALCULUS		54	15		10			22	6	9

TABLE 6.9 – Census Enrollment by Ethnicity by Discipline

Census Enrollment (Headcount)	Ethnic category								
Discipline and Ethnicity	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
ASTR									
Asian		7			5	9		7	2
Black/African American		14			14	14		9	9
Filipino		2				1			1
Hispanic		1			11	5		9	8
Multiple		13			2	6		14	7
Pacific Islander					1	1			
Unknown/Non Respondent		2			2	1		1	
White Non Hispanic		9			8	2		7	9
CHEM									
American Indian/Alaskan Native		1					2	1	2
Asian	52	161	165	71	143	144	64	136	145
Black/African American	13	61	67	15	80	66	20	81	66
Filipino	3	12	17	6	13	16	3	11	19
Hispanic	9	55	47	7	49	58	22	55	47
Multiple	7	32	48	12	53	63	13	45	46
Other Non white		4	1		1	1			
Pacific Islander	1	1	1		1	2			
Unknown/Non Respondent	4	32	29	2	24	11	5	21	19
White Non Hispanic	16	103	100	21	87	106	25	82	76
PHYS									
American Indian/Alaskan Native		1					2	1	2
Asian	52	161	165	71	143	144	64	136	145
Black/African American	13	61	67	15	80	66	20	81	66
Filipino	3	12	17	6	13	16	3	11	19
Hispanic	9	55	47	7	49	58	22	55	47
Multiple	7	32	48	12	53	63	13	45	46
Other Non white		4	1		1	1			
Pacific Islander	1	1	1		1	2			
Unknown/Non Respondent	4	32	29	2	24	11	5	21	19
White Non Hispanic	16	103	100	21	87	106	25	82	76

TABLE 6.10 – Success of Foster Youth Students by Discipline and for Laney College

Success	Term								
Foster Youth	2012 SUMMER	2012 FALL	2013 SPRING	2013 SUMMER	2013 FALL	2014 SPRING	2014 SUMMER	2014 FALL	2015 SPRING
ASTR									
No		72.73%			61.90%	51.35%		44.44%	55.88%
Yes		100.00%			100.00%	0.00%		0.00%	0.00%
CHEM									
No	66.67%	64.64%	65.18%	77.61%	59.19%	58.66%	71.81%	55.53%	61.72%
Yes	100.00%	80.00%	50.00%	#DIV/0!	50.00%	22.22%	66.67%	44.44%	33.33%
PHYS									
No	97.53%	67.54%	70.59%	75.00%	70.66%	72.93%	72.86%	71.03%	70.25%
Yes	66.67%	75.00%	33.33%	#DIV/0!	50.00%	60.00%	100.00%	85.71%	80.00%
Laney Total	**74.07%**	**68.72%**	**66.34%**	**73.40%**	**66.34%**	**67.98%**	**72.79%**	**68.95%**	**69.11%**

(#DIV/0! errors from district data)

TABLE 6.11 – Success of Low Income Students by Discipline and for Laney College

Success	Term								
Low Income	2012 SUMMER	2012 FALL	2013 SPRING	2013 SUMMER	2013 FALL	2014 SPRING	2014 SUMMER	2014 FALL	2015 SPRING
ASTR									
No		76.92%			58.82%	42.86%		33.33%	71.43%
Yes		71.88%			70.83%	48.39%		45.95%	40.91%
Unknown		#DIV/0!			0.00%	100.00%		0.00%	#DIV/0!
CHEM									
No	71.79%	69.15%	66.85%	77.78%	61.84%	67.86%	77.61%	59.17%	65.17%
Yes	64.62%	61.24%	63.92%	77.22%	57.97%	52.65%	67.07%	53.49%	58.54%
Unknown	#DIV/0!	100.00%	#DIV/0!	100.00%	40.00%	0.00%	66.67%	28.57%	#DIV/0!
PHYS									
No	94.87%	70.30%	72.62%	76.19%	76.54%	75.90%	82.35%	71.63%	76.58%
Yes	97.30%	66.47%	68.07%	74.00%	67.96%	70.86%	64.71%	72.48%	65.19%
Unknown	100.00%	50.00%	75.00%	75.00%	0.00%	#DIV/0!	75.00%	42.86%	100.00%
Laney Total	**74.07%**	**68.72%**	**66.34%**	**73.40%**	**66.34%**	**67.98%**	**72.79%**	**68.95%**	**69.11%**

(#DIV/0! errors from district data)

TABLE 6.12 – Success of Veterans by Discipline and for Laney College

Success	Term								
Veteran	2012 SUMMER	2012 FALL	2013 SPRING	2013 SUMMER	2013 FALL	2014 SPRING	2014 SUMMER	2014 FALL	2015 SPRING
ASTR									
No		72.73%			62.79%	50.00%		41.30%	52.94%
Yes		100.00%			#DIV/0!	0.00%		100.00%	50.00%
CHEM									
No	67.65%	64.92%	65.43%	78.46%	60.14%	58.33%	72.00%	55.40%	61.20%
Yes	50.00%	60.00%	53.33%	50.00%	23.08%	46.67%	50.00%	50.00%	66.67%
PHYS									
No	96.43%	67.55%	69.80%	75.79%	70.12%	73.33%	73.61%	72.07%	70.76%
Yes	#DIV/0!	71.43%	80.00%	0.00%	75.00%	55.56%	#DIV/0!	42.86%	63.64%
Laney Total	**74.07%**	**68.72%**	**66.34%**	**73.40%**	**66.34%**	**67.98%**	**72.79%**	**68.95%**	**69.11%**

(#DIV/0! errors from district data)

TABLE 6.13 – Retention Rates by Course and Laney College

Retention%	Term								
Course	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
ASTR 10 - DESCRIPTIVE ASTRONOMY	NA	86.67%	NA	NA	76.74%	79.49%	NA	48.94%	66.67%
CHEM 12A - ORGANIC CHEMISTRY	NA	87.76%	73.17%	NA	91.67%	77.27%	NA	76.09%	63.64%
CHEM 12B - ORGANIC CHEMISTRY	NA	62.50%	88.10%	NA	94.12%	83.33%	NA	62.50%	94.44%
CHEM 1A - GENERAL CHEMISTRY	52.73%	57.78%	56.85%	71.43%	57.24%	51.13%	47.37%	54.25%	53.27%
CHEM 1B - GENERAL CHEMISTRY	NA	63.41%	77.63%	88.64%	50.00%	79.78%	93.62%	52.73%	76.54%
CHEM 30A - INTRO GENERAL CHEM	91.84%	82.63%	80.00%	91.67%	78.43%	59.38%	100.00%	74.31%	73.85%
CHEM 30B - INTRO ORGAN/BIOCHEM	NA	73.17%	76.67%	NA	75.61%	78.85%	NA	80.77%	60.42%
PHYS 10 - INTRO TO PHYSICS	97.62%	86.67%	80.56%	89.58%	79.41%	83.33%	81.94%	72.22%	81.08%
PHYS 3A - GENERAL PHYSICS	NA	67.19%	NA	NA	84.13%	NA	NA	82.26%	NA
PHYS 3B - GENERAL PHYSICS	NA	NA	87.50%	NA	NA	97.67%	NA	NA	84.00%
PHYS 4A - GEN PHYSICS W/CALCULUS	NA	75.26%	50.00%	NA	71.82%	67.03%	NA	81.08%	55.68%
PHYS 4B - GEN PHYSICS W/CALCULUS	NA	76.67%	82.42%	NA	63.64%	89.47%	NA	65.12%	96.91%
PHYS 4C - GEN PHYSICS W/CALCULUS	NA	86.11%	NA	NA	91.18%	NA	NA	86.67%	NA
Laney Total	**84.30%**	**83.71%**	**79.07%**	**84.20%**	**81.31%**	**79.46%**	**84.68%**	**81.53%**	**81.25%**

TABLE 6.14 – Retention Rates by Discipline and by Laney College

Retention	Term								
	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
ASTR		86.67%			76.74%	79.49%		48.94%	66.67%
CHEM	71.15%	72.38%	72.21%	84.33%	70.58%	66.45%	78.29%	64.98%	68.87%
PHYS	97.62%	76.84%	76.81%	89.58%	77.57%	81.62%	81.94%	78.79%	78.54%
Laney	**84.30%**	**83.71%**	**79.07%**	**84.20%**	**81.31%**	**79.46%**	**84.68%**	**81.53%**	**81.25%**

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

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

Full-time faculty headcount: CHEM: 3* PHYS: 1; ASTR: 0

Part-time faculty headcount: CHEM: 9; PHYS: 5; ASTR: 1

Total FTEF faculty for the discipline, department, or program: CHEM: 7.0; PHYS: 2.4; ASTR: 0.2

Full-time/part-time faculty ratio: CHEM: 0.63; PHYS: 0.87; ASTR: 0 (based on FTEF)_____

Classified staff headcount: 2

*A fourth full-time faculty member for the Chemistry Department was hired August 2015.

B. Describe your current utilization of facilities and equipment.

Lectures are currently held in A233, A239, A266, A273, D200, E200, Forum. Lab sections meet in A235, A236, A237, A274 and A277

Equipment: Hewlett Packard Gas Chromatographs (3), Shimadzu High Pressure Liquid Chromatographs (2), Anasazi Instruments, EFT 60 MHz NMR Spectrometer, Perkin Elmer Infrared Spectrophotometers (2), Agilent UV-Vis Spectrophotometer, Spec20 Spectrophotometers (12), Varian Atomic Absorption Spectrophotometer

C. 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, and/or other factors.

D. 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, and/or other factors.

While most of the lecture rooms utilized by the department are Smart Classrooms, A273, which we frequently use, is not. The minimal amount of presentation technology (projector and document camera) should be installed in this room. Furthermore, a number of our instructors use presentation technology in the laboratory. Projectors and document cameras permanently installed in the laboratories would further facilitate the use of digital presentations in the lab.

Several instruments in the organic chemistry laboratory should be replaced. The gas chromatographs are reaching the end of their useful life spans. The three instruments are approximately 25 years old each and are frequently in a state of disrepair. Recently, the mass spectrometer (MS) detector on one of our instruments was nonfunctional, which prevented the completion of several experiments. The nuclear magnetic resonance (NMR) spectrometer, while still functioning, produces data that is of a much lower quality than the data presented

to the students in their textbooks and in lecture. In the past, the initial purchase expense and continuing operational costs of high field NMR spectrometers have been prohibitive for most 2-year institutions. New instruments entering the market in recent years have a much lower purchase cost and very low operational costs. We recommend purchasing a new gas chromatograph with MS detector, and a 400 MHz NMR spectrometer with non-cryogenic magnet.

E. 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, and/or other factors.

In the 40 years since the construction of the A complex, facility standards for academic teaching laboratories have greatly evolved. As well, the expansion of course offerings and section capacities has required scheduling courses in our department in lecture rooms that are not ideal for the presentation of the content of our disciplines. Ultimately, only a new science facility will adequately address the physical facilities needs of this department.

In our current facility, the chemistry laboratories either fail to meet or just meet the minimum room size recommended by the American Chemical Society. The cramped laboratory environment detracts from the students' experience and raises safety concerns. Perennial plumbing malfunctions are experienced in the general chemistry laboratories. The limited bench and fume hood space in the general chemistry laboratories has prevented the installation of an expensive instrument purchased with Measure A funds eight years ago. Current chemical hygiene standards require organic chemistry students to perform much of their work in fume hoods. Room A277 does not have an adequate number of fume hoods for all the students to perform their work in the hoods simultaneously. The distance between the general chemistry and organic laboratories is less than ideal in terms of providing adequate classified staff support during laboratory sessions.

Currently, all three of our chemistry faculty offices open directly into laboratories. Students and staff are frequently within 4 feet or less of active experiments when entering or leaving the offices, raising obvious safety concerns. Furthermore, all the offices are shared by no less than two faculty members. It is very difficult for faculty to meet with students in private or to hold office hours concurrently. Further, it is often difficult for faculty to provide distraction free space to students with testing accommodations.

While we are able to accommodate many of the lecture sections with rooms within the A complex, rooms that are generally appropriate for the type of instruction provided by our faculty, large sections of PHYS 3A, 3B, 4A/B/C, CHEM 1A and 1B are frequently moved into the larger lecture halls on campus. Instructors often find themselves teaching in rooms lacking sufficient whiteboard space, a periodic table, facilities to perform demonstrations, and in some cases, basic presentation technology. In fact, a number of lecture rooms in the A complex and elsewhere lack sufficient whiteboard space for presenting content laden lectures. In addition, the environmental conditions of the lecture rooms, labs, and offices in the A complex are often not conducive to learning and working. The current HVAC system in the A complex is incapable of providing a comfortable environment when temperature extremes are experienced in the East Bay.

The need for a new science facility is clear, but until a new facility is constructed, the following items should be addressed in the interim.

1. The HVAC system in the A complex should be renovated to provide environmental conditions conducive to learning and working, especially when temperature extremes are experienced in the East Bay.
2. The plumbing (especially the drains) in the general chemistry laboratories needs renovated. Issues with sewage gas are frequently encountered, as well as clogged drains. Many plumbing fixtures (faucets) are inoperable or clogged.
3. The weatherproofing on the door entering A235 needs addressed to prevent flooding in the room during rainstorms.
4. The lab bench drawers in A235 are in need of repair. The drawers repeatedly become inoperable and cannot open during more humid parts of the year. The handles of several drawers need replacement throughout all of the laboratories.
5. The hand soap dispenser in all the laboratories need to be replaced with new GOJO type dispensers. The campus is no longer purchasing soap refills for the current soap dispensers in the laboratories and stockrooms.
6. Paper towel dispensers need to be added. Several of the dispensers were removed during ADA renovation and never replaced.
7. The current dishwashers in the chemistry stockrooms needs to be removed and replaced with the new laboratory specific machines – one dishwasher that was a donated item is awaits installation.
8. The water purification system that was purchased eight years ago with Measure A funds, needs to be installed and connected to our Millipore Water filtration system needs to be permanently installed in the organic laboratory.
9. A broken sash (with shattered glass) needs to be replaced on one of the fume hoods in the general chemistry laboratories.
10. New instrumentation and laboratory equipment purchased with Measure A funds over 8 years ago need to be installed in the laboratories. The atomic absorption spectrophotometer will greatly enhance the laboratory experience of our general chemistry students. The spectrophotometer requires ventilation and a compressed air supply. The laboratory gas generators needed for the organic laboratory also need to be installed. They too require compressed air. The unit will allow the department to generate, in house, the gases consumed by our instruments.
11. The number of whiteboards in A266 needs to be expanded with better lighting in the front of the room.
12. At minimum, the Forum should receive new whiteboards and improved lighting in the front of the room.
13. All of the lecture rooms and laboratories should be kept on a better cleaning schedule. All of the areas of the A building around our lecture halls and laboratories should also be maintained better, particularly the restrooms which are continually in disarray and have dysfunctional towel dispensers, sinks that do not work, or filthy stalls.

For our complete list of Instructional Program Review Prioritization of Resource Requests, see Appendix A and also attached Priority List.

8. Community, Institutional, and Professional Engagement and Partnerships

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.

Our department is active in many committees. Cheli Fossum has given regular workshops on Task Stream training, and ILO and SLO implementation. Cheli was the Tenure Facilitator (2012-2013) and has been a Learning Assessment Committee (LAC) member since the beginning of the committee in 2005 and the LAC chair (from 2006 to 2009 and from F2013 - S2015). She is also in charge of coordinating PT/tenured faculty evaluations (as of Feb 2015) and is on the Program Review Task Force at the district (led by Linda Sanford).

Bill Trego (our new hire) wrote a Chemistry 30A lab to help students with reading lab glassware and working on precision and significant figures. Pinar Alscher has written and Revised several Chemistry 1A and 1B Labs and report sheets. Currently Dr. Abraham Reyes, Matt Stavis, and Pinar are discussing how to improve the Chem 1B lab manual. Dr. Reyes has created a lab based on a demo for rates of reaction of blue food dye. Pinar Alscher is a member of the Curriculum Committee. She is a shadow co-chair and has participated as tech review for the last 2 years and will be sitting on CIPD this year. As a member of the Curriculum Committee, Pinar assists faculty at Curricu-camp workshops where faculty can come for personalized help on improving outlines, and other curriculum efforts.

During the summer, Pinar worked with district curriculum teams to test CurricuNet Meta, which will go live sometime this fall.

Cheli and Pinar were part of the Standard IIA writing team (Cheli was a co-chair, Pinar a member of the writing team), and Cheli was a member of the accreditation steering committee (2013-2014).

Seth Slberman is on the facilities committee this semester and is an advocate for our department for better facilities and more faculty. He is also a valued member of the department as the Lab Coordinator. Without his constant support and flexibility, labs would not be adequately prepared or run smoothly. He has great suggestions for the health and safety for the lab which we have adopted due to his diligence and training.

Pinar has participated in the Laney College Scholarship Committee, in which various scholarships are reviewed for the purpose of dispensing monetary awards. This year she is the lead for the committee. She also volunteered at the tutoring center (F2012-F2014).

Matt Stavis has created PEMS and is very active promoting student involvement in the club. His students participate in stream cleanups at Leona camp in Oakland. The PEMS students also attend conferences and hold talks promoting women in STEM.

The department actively participates in Flex activities. Every semester we meet as a large group but this year we started having monthly department meetings to voice and solve concerns, and support each of our endeavors to improve our department functions. This has lead to better safety for our students and a cleaner department (work in progress!).

Stephen Corlett has served as the *de facto* committee chair and organizer for the District-Wide Chemistry discipline meetings, which occur twice a year – during Flex days in Fall and Spring. This task includes setting agenda items that affect all four campuses and to initiate discussions on common curriculum topics, enrollment issues, and other common teaching issues.

Stephen also has served as the Department chair for Chemistry, Physics, and Astronomy since 2008. Also has been on the Laney Instructional Equipment and Library Materials (IELM) funding committee for 2013-2014 and 2014-2015. In 2013, Stephen was a member of the hiring committee for a full-time chemistry position at Berkeley City College and currently serves as a member of the TRC for the hired faculty member. In Spring 2015 was the chair of the full-time chemistry hiring committee for Laney and currently serve as the chair of the TRC for the new hire, William Trego.

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

Pinar Alscher runs the Sustainability festival every spring and a lecture series in the fall under the guidance of Charles Neal, the PCCD district sustainability assistant manager. The festivals are a lively gathering that introduces students to sustainable practices in the PCCD, and at Laney. Students get a chance to talk to other students about sustainable practices, look at the garden, and talk to instructors about some of our CTE programs that support sustainable development. Community partners gather to sell wares and talk to students about current problems and solutions about sustainable development. Bill Trego makes science-based presentations to scouting groups. Pinar has hosted 1-5 visiting students for Fun with Science days, and gives regular tours of the department to OUSD high school students.

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

We encourage adjuncts to be part of the department and develop labs and clubs for the benefit of our students. We include all members of the department in our beginning of the semester department meetings. Adjunct faculty are given the opportunity to help design assessment plans. Adjunct faculty are part of the discussion deciding what to assess and how to assess it. Adjuncts are also included in the discussions of what to do with the assessment results. We value their opinions; they have good ideas.

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.

Classroom Technology:

Instructors need to be aware of what sort of technology will be available to them as they teach their classes and to have access to orientation and training as needed. A list of classrooms with a description of technology installed within that classroom helps the instructor plan for use of technology in their classes.

New instructors are referred to district workshops that provide orientation in the use of technology in the classroom.

Online Resources:

(Is there a district document listing and describing use of district resources.)
(Do we need to develop our own list of recommended websites for to be familiar with?)

Instructional Methods:

The chemistry area has a guide for new faculty that helps orient them as to the resources that are available to them in their teaching.

The physics and astronomy areas provide sample syllabi and schedules to instructors teaching a course for the first time. Current faculty in the department meet with the instructors and use these samples to explain what the expectations are for the course in terms of required textbooks, readings, examples of homework assignments, labs to be completed, the order or topics to be presented in the course, as well as possible grading formats.

Faculty are observed on a regular basis and one of the items addressed during these observations is whether effective instructional methods are in use and whether standards are being maintained in the class in a manner that is consistent with course outlines and with department expectations.

Faculty frequently share ideas about instructional methods

Cultural Sensitivity:

(This sounds like something that would be provided and required district-wide rather than left to individual departments.)
(Would our department have specific cultural sensitivity training needs?)

Faculty Mentoring:

Instructors are evaluated at regular intervals and recommendations are provided to each instructor as to how they may possibly improve their teaching methods. When needed an instructor may be asked to assist another instructor and serve as a mentor in providing more frequent advice and help.

So far the mentoring has been on a volunteer basis but assistance from professional development would help support the mentoring process on a more general basis.

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

The Chemistry and Physics department does not offer any distance education courses.

Also, we could use professional development training for faculty on laboratory safety, such as fire safety training.

10. Discipline, Department or Program Goals and Activities

A. 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).

B. 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.

Goal 1. Curriculum:

Activities and Rationale:

1. We plan to assess textbooks for CHEM 30A and 30B, and potentially select a new book that better aligns with the course outlines.

   Rationale: We have used the current book for about seven years. CHEM 30A instructors find that the current book provides inadequate treatment of a number of topics presented in the course.

2. We plan to review and update course outlines for the catalogue, we plan to update our textbooks, and we plan to map assignments to student learning outcomes.

   Rationale: This is both a part of the three-year curriculum review cycle and is mandated by the ACCJC.

3. We plan to deactivate courses that were intended as practice, are redundant, or experimental.

   Rationale: we should not offer classes we have no intention of teaching.

4. We plan to develop guidelines for teaching CHEM 30B, 12A, and 12B, as well as guidelines for teaching physics and astronomy classes.

   Rationale: This will help instructors be more consistent with each in terms of level of rigor, coverage of topics, and amount of time spent on laboratory experiments.

5. We plan to offer to consult and potentially participate in the teaching of MATH 208.

   Rationale: We hope to ensure that students who are taking this course to prepare for CHEM 30A, 30B, and 1A are receiving an adequate treatment of the mathematical skills required for these courses.

6. We plan to review and update the laboratory manuals for CHEM 1A, 1B, 30A, and 30B.

Rationale: We want to offer our students lab courses that not only provide instruction in laboratory technique, but also reinforce the concepts presented in lecture. To do so, we must ensure that the lab manuals are current with the material presented in lecture.

7. We plan to consider the development of curriculum for courses currently listed in the C-ID descriptors like Environmental Chemistry with lab (4.0 units), Survey of Chemistry and Physics (4.0 units, for STEM programs), and Forensic Chemistry (4.0 units). Also, Quantitative Chemistry (4.0 units).

   Rationale: To better serve current and future students, we need to ensure that we offer the courses required by various programs, and we need to broaden our offering of general education courses.

Goal 2. Assessment

Activities and Rationale:

1. Work on more collaborative/department-wide improvements, such as the circular reasoning/explanation questions project.

   Rationale: This will help ensure that the lessons we learn from assessment are used to help improve all sections and classes, not just some of them.

2. Develop guidelines for teaching Chem 30B, 12A, and 12B and guidelines for teaching physics and astronomy classes.

   Rationale: This will help instructors be more consistent with each in terms of level of rigor, coverage of topics, and amount of time spent on laboratory experiments.

3. Assess SLOs consistently in Physics and Astronomy. Complete action plans and status reports for Physics and Astronomy.

   Rationale: This will help ensure that we make improvements in physics and astronomy classes too.

4. Have a full-time instructor coordinate the assessment and action plans for Chem 30B.

   Rationale: Because Chem 30B has been taught by a series of different part-time instructors lately, there hasn't been consistency in the assessment of SLOs. Action plans have not been remembered or implemented. With a full-time faculty member responsible for this, it will get done.

5. Make sure all assessment information is in TaskStream. Submit for review everything in TaskStream (items from recent years have not been submitted for review).

   Rationale: This will ensure that all of our assessment information is recorded, up-to-date, and that it meets the standards for reporting.

Goal 3. Instruction:

Activities and Rationale:

1. We plan to develop strategies to improve our students' ability to write narrative explanations to concepts presented in our courses.

   Rationale: Initial and anecdotal data suggests that a substantial percentage of our students are not proficient in this skill. Assessment data will hopefully aid in developing an action plan, which will include pedagogy that can be employed across our courses.

2. We plan to advocate for and support all efforts to build a new science building, one that will enhance student instruction at all levels, lecture and laboratory.

   Rationale: Our antiquated facilities are in disrepair and are outdated with regard to safety standards and with regard to modern approaches to delivery of instruction. In addition to chemistry and physics, biology would greatly benefit for multiple reasons.

Goal 4. Student Success and Student Equity:

Activities and Rationale:

1 We plan to implement measures to improve the student retention and success rates for CHEM 1A by adopting a new prerequisite that will have the option of being fulfilled with successful performance on an entrance exam. As well, we will consider offering a late start CHEM 30A (or CHEM 50) section for students admitted to CHEM 1A who show early signs of poor performance.

   Rationale: CHEM 1A has one of the lowest retention and success rates in our department while having a high demand that we frequently cannot meet. Data collected across the district shows a clear correlation between student performance on an entrance exam and success in CHEM 1A. CHEM 1A is not intended to serve as an introductory chemistry course--students need a beginning foundation in chemistry in order to succeed in 1A.

2. We plan to seek ways to attract and retain more students in the Chem 12A/B sequence.

   Rationale: Organic chemistry is a required course for a number of degree programs (e.g., chemistry and biology), and is a requirement for admission to most graduate level medical programs (MD, PA, DDS, DVM, etc.). We offer quality instruction in organic chemistry by maintaining small class sizes, and by maintaining a fully equiped organic laboratory.

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

Activities and Rationale:

1. We plan to offer safety training for all faculty and staff.

   Rationale: Faculty are responsible for the safety and well-being of our students working in the laboratory. Laboratory technicians encounter considerable risk in their work. Consistent policies, training in accident prevention, and emergency response are essential to ensure the safety of our students and employees.

2. We plan to offer technical training on instrumentation used in chemistry laboratories.

   Rationale: modern instrumentation used in general, organic, and if approved by curriculum committee, qualitative/quantitative chemistry requires training on use and for development of experiments.

Appendix A

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

College: Laney

Discipline, Department or Program: ASTR, CHEM, PHYS

Contact Person: Stephen Corlett

Date: 10/23/15

Resource Category	Description	Priority Ranking (1 – 5, etc.)	Estimated Cost	Justification (page # in the program review narrative report)
Human Resources: Faculty	1.0 FTE Chemistry 1.0 FTE Physics	1		Section 3, 7
Human Resources: Classified	none requested			
Human Resources: Student Workers	Need students workers	2		Section 7
Technology	Chemistry drawing software -2 year site license Add smart technology to all lecture and laboratory room	2		Section 7
Equipment	NMR spectrometer Upgrade GC/MS apparatus Melt-Temp apparatus Heating mantles/controllers	1		Section 7
Supplies	New glassware New Heating Mantles/control	2		Section 7
Facilities	Fix broken plumbing and electrical. Install compressed air supply New science building (see attached list)	1		Section 7
Professional Development	Safety (Fire) Training for Faculty	4		Section 9

Appendix B

PCCD Program Review
Alignment of Goals Template

College: Laney

Discipline, Department or Program: ASTR, CHEM, PHYS

Contact Person: Stephen Corlett

Date: 10/23/15

From the Laney College Website on the Learning Assessment website:
http://www.laney.edu/wp/assessment/institutional-learning-outcomes-ilos-for-laney-college/

Communication (ILO 1) Students will effectively express and exchange ideas through various modes of communication.

Critical Thinking and Problem Solving (ILO 2) Students will be able to think critically and solve problems by identifying relevant information, evaluating alternatives, synthesizing findings and implementing effective solutions.

Career Technical Education (ILO 3) Students will demonstrate technical skills in keeping with the demands of their field of study.

Global Awareness, Ethics and Civic Responsibility (ILO 4) Students will be prepared to practice community engagement that addresses one or more of the following: environmental responsibility, social justice and cultural diversity.

Personal and Professional Development (ILO 5) Students will develop their knowledge, skills and abilities for personal and/or professional growth, health and well-being.

From the Peralta District Education Services website are the following Goals and Institutional Objectives:
http://web.peralta.edu/programreview/

1. Ensure quality and excellence of academic programs.
2. Provide a standardized methodology for review of instructional areas.
3. Provide a mechanism for demonstrating continuous quality improvement, producing a foundation for action.
4. Identify effective and exemplary practices.
5. Strengthen planning and decision-making based upon current data.
6. Identify resource needs.

7. Develop recommendations and strategies concerning future directions and provide evidence for supporting plans for the future, within the department, at the college and at the District level.
8. Inform integrated planning at all levels within the College and the District.
9. Ensure that educational programs reflect student needs, encourage student success, and improve teaching and learning.

Discipline, Department or Program Goal	College Goal	PCCD Goal and Institutional Objective
1.1. We plan to assess textbooks for CHEM 30A and 30B, and potentially select a new book that better aligns with the course outlines.	ILO 2	1, 2,
1.2 We plan to review and update course outlines for the catalogue, we plan to update our textbooks, and we plan to map assignments to student learning outcomes.	ILO 2	1, 9
1.3. We plan to deactivate courses that were intended as practice, are redundant, or experimental.		2, 9
1.4. We plan to develop guidelines for teaching CHEM 30B, 12A, and 12B, as well as guidelines for teaching physics and astronomy classes.	ILO 2	2, 4, 7, 9
1.5. We plan to offer to consult and potentially participate in the teaching of MATH 208.	ILO 2	1, 9
1.6. We plan to review and update the laboratory manuals for CHEM 1A, 1B, 30A, and 30B.		1, 9
1.7. We plan to consider the development of curriculum for courses currently listed in the C-ID descriptors like Environmental Chemistry with lab (4.0 units), Survey of Chemistry and Physics (4.0 units, for STEM programs), and Forensic Chemistry (4.0 units). Also, Quantitative Chemistry (4.0 units).		9
2.1. Work on more collaborative/department-wide improvements, such as the circular reasoning/explanation questions project.		9
2.2. Develop guidelines for teaching	ILO 2	9

	Chem 30B, 12A, and 12B and guidelines for teaching physics and astronomy classes.		
2.3.	Assess SLOs consistently in Physics and Astronomy. Complete action plans and status reports for Physics and Astronomy.		2, 3
2.4.	Have a full-time instructor coordinate the assessment and action plans for Chem 30B.		2
2.5.	Make sure all assessment information is in TaskStream. Submit for review everything in TaskStream (items from recent years have not been submitted for review).		2
3.1	We plan to develop strategies to improve our students' ability to write narrative explanations to concepts presented in our courses.		9
3.2.	We plan to advocate for and support all efforts to build a new science building, one that will enhance student instruction at all levels, lecture and laboratory.		1, 3, 6, 7, 8, 9
4.1	We plan to implement measures to improve the student retention and success rates for CHEM 1A by adopting a new prerequisite that will have the option of being fulfilled with successful performance on an entrance exam. As well, we will consider offering a late start CHEM 30A (or CHEM 50) section for students admitted to CHEM 1A who show early signs of poor performance.		1, 2, 9
4.2	We plan to seek ways to attract and retain more students in the Chem 12A/B sequence.		1, 2, 9
5.1	We plan to offer safety training for all faculty and staff.		1, 2, 3, 4, 6
5.2	We plan to offer technical training on instrumentation used in chemistry laboratories.		1, 2, 3, 4, 6

Appendix C

Program Review Validation Form and Signature Page

College: Laney

Discipline, Department or Program: ASTR, CHEM, PHYS

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 Chair

_____ _____ _____

Print Name Signature Date

Received by Vice President of Instruction

_____ _____ _____

Print Name Signature Date