

# The CTE Program Review Report

## 1. College: Laney

**Discipline, Department or Program:** Biomanufacturing Program

**Date:** October 30, 2015

**Members of the Comprehensive Instructional Program Review Team:** Leslie Blackie, Doug Bruce

**Members of the Validation Team:**

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

Please provide a mission statement or a brief general statement of the primary goals and objectives of the discipline, department or program. Include any unique characteristics, degrees and certificates the program or department currently offers, concerns or trends affecting the discipline, department or program, and a description of how the discipline, department or program aligns with the college mission statement.

The mission of the Biomanufacturing program within the Biology department is to prepare graduates to work in the biomanufacturing/pharmaceutical industry as technicians. Students will learn how to operate and maintain the equipment used to manufacture protein pharmaceutical products; culture bacterial, yeast and mammalian cells and recover the proteins that those cells produce. Students will follow good manufacturing practices by maintaining records in order to comply with quality assurance procedures and government regulations.

Laney College currently offers two certificate programs in Biomanufacturing: Certificate of Proficiency in Biomanufacturing skills (9 units) and the Certificate of Achievement in Biomanufacturing (17 units). In addition we are in the third year of offering an Associates in Science degree (and Certificate of Achievement – additional 14 units) in Biomanufacturing Production. The AS degree builds on the foundation provided by the first two certificates and teaches more laboratory skills and more lecture based material. This additional education will allow the students to be eligible for higher level employment within the Biomanufacturing industry (technician jobs in addition to entry level jobs)

These programs are stackable certificates that offer students the flexibility to get more education and improve their position in the workforce in a career ladder. There are many pharmaceutical companies in the Bay Area and the Associate of Science in Biomanufacturing Production program will help to fill a vital need in the pharmaceutical/biomanufacturing workforce.

We have been concerned that the cuts to courses and the inability to add in new courses to the schedule will damage the developing Biomanufacturing program. In addition, cuts to the offerings of sections of classes in other departments (Chemistry and Math) necessary for completion of the certificates has also made it more difficult for students to achieve their educational goals.

The Biomanufacturing Program requires a full-time instructor, one half-time lab technician, a half-time program grant coordinator to work with grants and development of new programs, increased supply and equipment budgets, a student aide budget, money for tutors and additional space to meet current needs and

accommodate anticipated growth as well as the opportunity to implement the new courses for the most advanced Biomanufacturing degree . The Biomanufacturing program needs a dedicated lab space to be able to house the specialized equipment for the program and allow for more classes to be offered.

The Biology department has recently hired a fulltime faculty member whose main teaching assignment is in the Biomanufacturing program, however the program urgently requires a lab technician to prepare materials for lab classes, manage ordering and organization of the Biomanufacturing lab and facilitate maintenance of equipment.

### 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:*

- 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.

Within our Biomanufacturing Program, we have several courses that have not been updated in the past three years, and will be updated this year.

Course Number	Course Name	Date of most recent update
072A	Biotech Instrumentation: Good Laboratory Practices and Safe Chemical Handling	12/3/2010
072B	Biotech Instrumentation: Clean Room	12/3/2010
072C	Biotech Instrumentation: PCR	12/3/2010
072D	Biotech Instrumentation: Quality Control	12/3/2010
74	Scientific Communication	12/3/2010
79	Bioreactor Cell Culture and Protein Recovery	12/3/2010
73	Cell Culture Principles and Techniques	1/19/2011

Other courses in the Biomanufacturing Program have been updated in the past three years but as a CTE program should be updated every two years. These will also be updated this year.

75	Fundamentals of Biotechnology	10/5/2012
76	Principles of Biomanufacturing	10/5/2012
77	Business and Regulatory Practices in Biomanufacturing	10/22/2012

The Biomanufacturing courses will be updated once “Curricunet Meta” is up and running. One of the reasons to wait on updating Biomanufacturing courses is the development of CID Descriptors for Biomanufacturing/Biotechnology courses. We were aware of the discussion at the state level and decided to wait until the CID Descriptors were approved and available to update our courses.

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

The Biomanufacturing faculty (and the Biology department faculty as a whole) work collaboratively to perform assessments and improve curriculum on a regular basis. Our analysis of assessment results and collaboration among faculty members to improve our teaching advances student access, success and equity. All f/t faculty and many p/t faculty are involved on the college and/or district level, and promote innovation and collaboration on many levels. We have built programs based on the career ladder model with stackable certificates culminating in an Associates of Science degree - and continue to improve upon these models. We work to advance access, success and equity in all our programs. Group work and creating a classroom atmosphere with an expectation that students support each other pertains to all the strategic planning goals. The biomanufacturing program is particularly successful at engaging our community and we continue to work on issues of equity for our students. Equity and success for all students is of constant concern in our department. We have developed a lending library for books using grant funds, and have developed laboratory manuals and readers for courses to ease the financial burden on students.

The Biomanufacturing faculty are preparing to submit courses that are eligible for C-ID descriptors and will be updated in the coming year. In addition we are developing a new “Intro to Biotechnology” nontransfer course that can be used to articulate with highschool programs and build pathways into the Laney Biomanufacturing program, used as an adult education course, and as an introduction to the biomanufacturing certificate programs. This course will support basic skills specific for the biomanufacturing program with more time spent on topics to increase success of nontraditional students in the area of biomanufacturing.

- 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?

Biomanufacturing	Active - Certificate of Achievement	03/09/11 STATE APPROVAL
Biomanufacturing Production	Active - A.S. Degree	09/10/2012 STATE APPROVAL
Biomanufacturing Skills	Active - Certificate of Proficiency	12/11/12 BOT

None of our degrees can be complete through Distance Education.

#### 4. Assessment:

Laney’s Program Review Resources & Information webpage (<http://www.laney.edu/wp/instruction/program-review/>) has several files you will need to complete this section. Please look at the files available and follow the instructions below. If you have questions, contact the Laney Assessment Coordinators, Heather Sisneros and Rebecca Bailey ([hsisneros@peralta.edu](mailto:hsisneros@peralta.edu), [rbailey@peralta.edu](mailto:rbailey@peralta.edu)).

- 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)

Biomanufacturing Program level outcomes are published on the Laney College website, specifically the Biomanufacturing webpage. The link is [www.laney.edu/wp/biomanufacturing](http://www.laney.edu/wp/biomanufacturing)

Student Learning Outcomes For individual courses are on the syllabi of the course and handed out to students as well as published on the individual course Moodle site available to students once they are enrolled in the course.

- Insert evidence of the approval status for all SLOs for every course offered in your department. Note that if the course has been updated through CurricUNET in 2007 or later, SLOs have been approved. Course approval dates can be found in the CurricUNET Report August 2015 file. Use the toggles at the column headings to choose your cluster or department, select the boxes for your area, and copy/paste below. The second tab shows the key to cluster abbreviations.

Course Number	Course Name	Date of most recent update	In current catalog?	In inventory?	State	In PROMT?	Are course SLOs and evaluation methods in C-net?	Are the course SLO evaluation tools included in the COR assignment section?	Part of this course part of a program?	NOTES: What will be done with this course when a by whom
072A	Biotech Instrumentation: Good Laboratory Practices and Safe Chemical Handling	12/3/2010			CCC000525831		Yes		Yes	
072B	Biotech Instrumentation: Clean Room	12/3/2010			CCC000525832		Yes		Yes	
072C	Biotech Instrumentation: PCR	12/3/2010			CCC000525833		Yes		Yes	
072D	Biotech Instrumentation: Quality Control	12/3/2010			CCC000525834		Yes		Yes	
74	Scientific Communication	12/3/2010			CCC000525836		Yes		Yes	
79	Bioreactor Cell Culture and Protein Recovery	12/3/2010			CCC000525838		Yes		Yes	
73	Cell Culture Principles and Techniques	1/19/2011			CCC000525835		Yes		Yes	Not taught Laney Campus. Facilities may have equipment first
75	Fundamentals of Biotechnology	10/5/2012			CCC000377476		Yes		Yes	
76	Principles of Biomanufacturing	10/5/2012			CCC000459782		Yes		Yes	
77	Business and Regulatory Practices in Biomanufacturing	10/22/2012			CCC000525837		Yes		Yes	

To answer the following questions, please review either your “At-a -Glance” report generated from TaskStream, or your Laney Assessment Spreadsheet. Answer the questions below, and attach the report (save it with your area’s information and include it when you turn in your Program Review).

- 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 year of assessment for each example.

Attach as evidence your Laney Assessment Spreadsheet or TaskStream “Status Report” for the courses in your examples. – See attached Bioman Assessment Spreadsheet.

- Improvement 1 Students met the criteria for knowing the advantages and disadvantages of using different types of organisms in biomanufacturing, but the instructor felt they would benefit from greater knowledge of this basic topic. The Biology 76 lecture on the topic was given more emphasis and contextualized to job interview skills and knowledge.

Improvement 2 In a variety of the biomanufacturing certificate courses, instructors noted students would benefit from more specific instruction on how to apply their basic skills and knowledge to biomanufacturing. Instructors across the biomanufacturing program developed certificates and degrees, and continue to update them with an emphasis on contextualized learning.

Improvement 3. Students will continue to do lab reports and learn how to communicate their lab findings in writing, a skill industry highly values.

- 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 relevant data from your Laney Assessment Spreadsheet or the TaskStream report “Assessment Findings and Action Plan” section for each example.

Plan 1. Students will continue to write papers and learn how to communicate science clearly, a skill industry highly values. (Biol 74, 75,76,77)

Plan 2. Continue to assess students skill level with practice in the lab and skill assessment tests. (Biol 75, 72A, 72B, 72C, 72D, 79)

Plan 3. Students will continue to document in their notebooks and learn how to follow industry standard documentation requirements. (Biol 75,72A,72B,72C,72D, 79)

- 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 courses that are taught both in distance education and face-to face

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

Assessment results have not been compared between different sections of Biol 75 (the only course with more than one section taught a semester. Both sections are taught by the same instructor, and assessment results have been pooled into data reports.

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

In Fall 2014 one of the biomanufacturing courses participated in the assessment of ILO #1. In several courses, the biomanufacturing program will be participating in the assessment of ILO #2 on critical thinking this year.

- How are your course and/or program level outcomes aligned with the institutional level outcomes? Please describe and attach either your Laney Assessment Spreadsheet or “Goal Alignment Summary” report from TaskStream.

See attached Laney Assessment spreadsheet

All SLOs in the biomanufacturing program are either mapped to a PLO which is then mapped to an ILO or the SLOs are directly mapped to an ILO

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## 5. Instruction:

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

The Biomanufacturing curriculum is primarily lab driven. Biomanufacturing instructors use hands-on activities in labs to teach following of protocols and the mastering of skills to manipulate equipment and new technology in the laboratory. In the introductory lab classes students are introduced to a new piece of equipment every lab period. The use of equipment is reinforced in subsequent lab periods for the introductory classes and in the more advanced biomanufacturing classes. The classes facilitate group discussion and team work as well as data analysis.

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

Many of our faculty use Moodle as a supportive platform for courses with practice quizzes, online documents and recent research. In some of courses, exams and assignments are provided through Moodle as well. We have computers in the lab room attached to specific equipment as it is important for the students to learn the software for different types of equipment. Students also need to learn how to enter data on computers and we are planning on introducing electronic record keeping as part of the documentation required by the Industry.

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

The Biomanufacturing faculty discuss issues such as exams, assignments and grading scales to ensure integrity and consistency of standards. Consultation with colleagues, both within the department and at other colleges in regional meetings is utilized to deal with the challenges of the classroom and with Distance education courses. In addition, the faculty attend conferences and seminars dedicated to biomanufacturing/ biotechnology programs during the summer. Consultation with Industry Advisory Boards also contributes to the ongoing relevance of the curriculum.

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

There are no courses that are taught both in distance education and face-to face

- Briefly discuss the enrollment trends of your discipline, department or program. Include the following:
  - Overall enrollment trends in the past three years

<b>BIOL/HTLOC</b>	<b>2012 Summer</b>	<b>2012 Fall</b>	<b>2013 Spring</b>	<b>2013 Summer</b>	<b>2013 Fall</b>	<b>2014 Spring</b>	<b>2014 Summer</b>	<b>2014 Fall</b>	<b>2015 Spring</b>
Headcount	230	309	360	217	303	371	181	426	420

<b>Age</b>	<b>2012 Summer</b>	<b>2012 Fall</b>	<b>2013 Spring</b>	<b>2013 Summer</b>	<b>2013 Fall</b>	<b>2014 Spring</b>	<b>2014 Summer</b>	<b>2014 Fall</b>	<b>2015 Spring</b>
Under 16	2	1		4	2		15	2	
16-18	22	43	5	48	54	10	25	38	31
19-24	92	489	334	96	504	418	103	445	363
25-29	43	216	211	39	238	207	50	228	245
30-34	19	116	98	24	135	117	29	118	109
35-54	25	120	124	33	161	124	29	154	132
55-64	2	6	9	1	16	11	3	24	15
65 & Above		2	3	1	1	2	1	4	
<b>Grand Total</b>	<b>205</b>	<b>993</b>	<b>784</b>	<b>246</b>	<b>1,111</b>	<b>889</b>	<b>255</b>	<b>1,013</b>	<b>895</b>

<b>Ethnicity</b>	<b>2012 Summer</b>	<b>2012 Fall</b>	<b>2013 Spring</b>	<b>2013 Summer</b>	<b>2013 Fall</b>	<b>2014 Spring</b>	<b>2014 Summer</b>	<b>2014 Fall</b>	<b>2015 Spring</b>
American Indian/Alaskan Native		1					5		2
Asian		58	268	227	76	273	272	81	240
Black/African American		47	229	174	48	299	193	52	256
Filipino		4	31	26	6	46	31	6	35
Hispanic		18	102	75	29	129	99	27	116
Multiple		20	110	94	36	124	90	38	124
Other Non white			5		1		4	1	3
Pacific Islander		7	8	4	5	10	7	2	3
Unknown/Non Respondent		10	59	34	9	50	43	6	47
White Non Hispanic		40	181	150	36	175	150	42	187
<b>Grand Total</b>		<b>205</b>	<b>993</b>	<b>784</b>	<b>246</b>	<b>1,111</b>	<b>889</b>	<b>255</b>	<b>1,013</b>

<b>Sex</b>	<b>2012 Summer</b>	<b>2012 Fall</b>	<b>2013 Spring</b>	<b>2013 Summer</b>	<b>2013 Fall</b>	<b>2014 Spring</b>	<b>2014 Summer</b>	<b>2014 Fall</b>	<b>2015 Spring</b>
Female	132	633	491	162	721	587	160	664	587
Male	65	322	267	75	367	272	89	329	289
Unknown	8	38	26	9	23	30	6	20	19
<b>Grand Total</b>	<b>205</b>	<b>993</b>	<b>784</b>	<b>246</b>	<b>1,111</b>	<b>889</b>	<b>255</b>	<b>1,013</b>	<b>895</b>

- An explanation of student demand (or lack thereof) for specific courses.  
We have had increased demand for the Introductory Lab course, Biology 75, and have increased the offerings over the past few years from 1 section in fall and spring semesters to two sections each semester, and an additional section in the summer.
- Productivity for the discipline, department, or program compared to the college productivity rate.

As you can see in the, the Biology department exceeds the college's productivity rates in almost every semester, with an average rate of 19.52.

BIOL/HLTOC	Term								
	2012 SUMMER	2012 FALL	2013 SPRING	2013 SUMMER	2013 FALL	2014 SPRING	2014 SUMMER	2014 FALL	2015 SPRING
Productivity	16.28	22.14	20.56	17.08	20.54	21.41	18.44	19.64	19.58

College productivity rate = 16.34 is the average of the following data points

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

Productivity by course in biomanufacturing program

Productivity	Term										
	Course	2012 SUMMER	2012 FALL	2013 SPRING	2013 SUMMER	2013 FALL	2014 SPRING	2014 SUMMER	2014 FALL	2015 SPRING	
	BIOL 72A - BIOTECH: GOOD LAB PRACTICES		NA	NA	NA	NA	7.53	NA	NA	11.83	NA
	BIOL 72B - BIOTECH: CLEAN ROOM		NA	NA	NA	NA	7.53	NA	NA	10.76	NA
	BIOL 72C - BIOTECH: PCR		NA	NA	NA	NA	6.46	NA	NA	12.37	NA
	BIOL 72D - BIOTECH : QUALITY CONTROL		NA	NA	NA	NA	7.53	NA	NA	11.30	NA
	BIOL 74 - SCIENTIFIC COMMUNICATION		NA	NA	NA	NA	5.00	NA	NA	5.50	NA
	BIOL 75 - FUNDAMENTALS/BIOTECH		NA	14.70	13.53	9.83	6.18	11.17	10.64	10.29	8.82
	BIOL 76 - BIOMANUFACTURING		NA	13.50	12.00	NA	10.00	12.00	NA	17.00	14.50
	BIOL 77- BUSINESS AND REGULATORY		NA	NA	NA	NA	NA	12.00	NA	NA	18.50
	BIOL 79 BIOREACTOR CELLCULTURE		NA	NA	NA	NA	NA	10.58	NA	NA	11.11

- Salient factors, if known, affecting the enrollment and productivity trends you mention above.
- Productivity in the biomanufacturing classes is comparable to the productivity in other CTE programs across the campus. CTE classes in general have lower enrollment (limited by the access to lab stations/hands on experiences with equipment) then lecture only classes, which lowers the productivity equation. Therefore this comparison of productivity of CTE classes to all classes across the college is an incorrect comparison since it is comparing lecture only classes to CTE classes with their emphasis of “hands on” experiences – i. e. lab classes. This comparison of across college to CTE is a case of comparing “apples to oranges”.
- Are courses scheduled in a manner that meets student needs and demands? How do you know?

Enrollment comparison of Day versus Night (no information about actual time of day)

Course by Time of Day	2012	2012	2013	2013	2013	2014	2014	2014	2015
	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring
BIOL 72A - BIOTECH: GOOD LAB PRACTICES						14		22	
DAY						14		22	
BIOL 72B - BIOTECH: CLEAN ROOM						14		20	
DAY						14		20	
BIOL 72C - BIOTECH: PCR						12		23	



DAY					12				23
<b>BIOL 72D - BIOTECH : QUALITY CONTROL</b>					<b>16</b>				<b>21</b>
DAY					16				21
<b>BIOL 74 - SCIENTIFIC COMMUNICATION</b>					<b>10</b>				<b>11</b>
EVENING					10				11
<b>BIOL 75 - FUNDAMENTALS/BIOTECH</b>	<b>25</b>	<b>23</b>	<b>17</b>	<b>21</b>	<b>19</b>	<b>18</b>	<b>35</b>	<b>15</b>	
DAY	25	23	17	21	19	18	35	15	
<b>BIOL 76 - BIOMANUFACTURING</b>	<b>27</b>	<b>24</b>		<b>20</b>	<b>24</b>		<b>34</b>	<b>29</b>	
DAY	27	24		20	24		34	29	
<b>BIOL 77 BUSINESS AND REGULATORY</b>					<b>24</b>			<b>37</b>	
online					24			37	
<b>BIOL 79 Bioreactor Cell Culture</b>					<b>18</b>			<b>20</b>	
DAY					18			20	
<b>Grand Total</b>	<b>NA</b>	<b>52</b>	<b>47</b>	<b>17</b>	<b>107</b>	<b>85</b>	<b>18</b>	<b>166</b>	<b>101</b>

- Are courses scheduled in a manner that meets student needs and demands? How do you know? We communicate with the counseling department and attempt to meet student demand in terms of numbers of sections offered of the Biomanufacturing program and at what time of day. We listen to the students who discuss the challenges in scheduling and respond to the best of our ability, although scheduling lab classes is difficult due to the lack of lab space available. We research other department's schedules and communicate with the Chemistry and Math departments since we share students in the certificate programs.
- Recommendations and priorities.

It is critical to the success and safety of the students to lower the course maximums to at least the lab stations available in the room, and to allow smaller sections of classes to not be cancelled. Biomanufacturing (and CTE courses) are intensive hands on courses, and it is a much better learning environment for the students when they have increased individualized attention from the instructor. Also cancelling classes due to lower enrollment (particularly when the class maximums are set too high), means we lose those students – they often do not try to enroll the next semester or in other classes in the program, but leave all together .

## 6. Student Success:

- Describe course completion rates (*% of students that earned a grade "C" or better or "Credit"*) in the discipline, department, or program for the past three years. Please list each course separately. How do the discipline, department, or program course completion rates compare to the college course completion standard?
- College course completion standard: Average is 69.74%

	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring	AVG
Success%	74.07%	68.72%	66.34%	73.40%	66.34%	67.98%	72.79%	68.95%	69.11%	69.74%

- Department/discipline course completion rates: Average is 72.01%

BIOL/HTLOC	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring	AVG
Success%	77.07%	72.43%	69.63%	80.08%	66.53%	69.67%	74.13%	69.76%	68.81%	72.01%

Course	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring	AVG
BIOL 72A - BIOTECH: GOOD LAB PRACTICES	NA	NA	NA	NA	78.57%	NA	NA	90.91%	NA	84.7%
BIOL 72B - BIOTECH: CLEAN ROOM	NA	NA	NA	NA	71.43%	NA	NA	#####	NA	85.7%
BIOL 72C - BIOTECH: PCR	NA	NA	NA	NA	83.33%	NA	NA	91.30%	NA	87.3%
BIOL 72D - BIOTECH : QUALITY CONTROL	NA	NA	NA	NA	75.00%	NA	NA	95.24%	NA	85.1%
BIOL 74 - SCIENTIFIC COMMUNICATION	NA	NA	NA	NA	60.00%	NA	NA	#####	NA	80.0%
BIOL 75 - FUNDAMENTALS/BIOTECH	NA	72.00%	69.57%	80.00%	71.43%	84.21%	77.78%	54.29%	73.33%	72.8%
BIOL 76 - BIOMANUFACTURING	NA	55.56%	54.17%	NA	70.00%	70.83%	NA	70.59%	68.97%	65.0%
BIOL 77-BUSINESS AND REGULATORY PRACTICES	NA	NA	NA	NA	NA	70.83%	NA	NA	60.00%	65.4%
BIOL 79-BIOREACTOR CELL CULTURE	NA	NA	NA	NA	NA	100.00%	NA	NA	81.25%	90.62%
<b>Grand Total</b>	<b>NA</b>	<b>63.78%</b>	<b>61.87%</b>	<b>80.00%</b>	<b>72.82%</b>	<b>81.46%</b>	<b>77.78%</b>	<b>80.46%</b>	<b>70.88%</b>	79.62%

- Discussion: Biomanufacturing program course completion rates are higher than the college completion standard and the biology department.
- Describe course completion rates in the department for **Distance Education** courses (100% online) for the past three years. Please list each course separately. How do the department's Distance Education course completion rates compare to the college course completion standard?

College course completion standard; Average for the College is 56.79% for 100% DE

100% DE	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring	AVG
<b>Grand Total for Laney</b>	<b>70.05%</b>	<b>57.60%</b>	<b>50.86%</b>	<b>57.64%</b>	<b>51.30%</b>	<b>54.86%</b>	<b>62.58%</b>	<b>54.77%</b>	<b>51.44%</b>	56.79%

Department/discipline Distance Education (100% online) course completion rates: Average is 69.5%

100% DE	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring	AVG
<b>Grand Total</b>	<b>75.00%</b>	<b>75.65%</b>	<b>57.53%</b>	<b>83.33%</b>	<b>56.86%</b>	<b>59.49%</b>	<b>85.19%</b>	<b>70.10%</b>	<b>62.24%</b>	69.5%

#### Biomanufacturing Course (100% online)

Course	2014 Spring	2015 Spring
BIOL 77 - BUSINESS & REGULATORY PRACTICE	70.83%	60.00%

Discussion:

We need to continue offering the Bio 77 online course to gather more data before we can discuss trends in completion rates.

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

We do not offer any Hybrid courses at this time

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

There are no courses that are taught both in distance education and face-to face

- How do you assess the overall effectiveness of Distance Education course?  
Biology 77 Business and Regulatory practices is an excellent class to offer online and the two years the course has been offered the completion rate has been higher than the college standard.
- Describe the discipline, department, or program retention rates (After the first census, the percent of students earning any grade but a "W" in a course or series of courses). for the past three years. How does the discipline, department, or program retention rate compare to the college retention standard?

College retention standard; Average is 82.17%

LANEY	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring	average
Retention%	84.30%	83.71%	79.07%	84.20%	81.31%	79.46%	84.68%	81.53%	81.25%	82.17

Discipline, department, or program retention rates; Biomanufacturing program average is 84.78%  
Biology department Average is 83.52%

Course	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring	AVG
BIOL 72A - BIOTECH: GOOD LAB PRAC	NA	NA	NA	NA	78.57%	NA	NA	90.91%	NA	84.74%
BIOL 72B - BIOTECH: CLEAN ROOM	NA	NA	NA	NA	78.57%	NA	NA	100%	NA	89.29%
BIOL 72C - BIOTECH: PCR	NA	NA	NA	NA	91.67%	NA	NA	91.30%	NA	91.49%
BIOL 72D - BIOTECH : QUALITY CONT	NA	NA	NA	NA	100%	NA	NA	100%	NA	100.00%
BIOL 74 - SCIENTIFIC COMM	NA	NA	NA	NA	70.00%	NA	NA	100%	NA	85.00%
BIOL 75 - FUNDAMENTALS/BIOTECH	NA	80.00%	73.91%	93.33%	71.43%	84.21%	77.78%	65.71%	73.33%	77.46%
BIOL 76 - BIOMANUFACTURING	NA	62.96%	58.33%	NA	75.00%	79.17%	NA	76.47%	79.31%	71.87%
BIOL 77-BUSINESS AND REGULATORY PRACTICES	NA	NA	NA	NA	NA	NA	75.00%	NA	70.00%	72.50%
BIOL 79- BIOREACTOR CELL CULTURE	NA	NA	NA	NA	NA	NA	100%	NA	81.25%	90.60%
<b>Grand Total</b>	<b>NA</b>	<b>71.48</b>	<b>66.12%</b>	<b>93.33%</b>	<b>80.70%</b>	<b>81.69%</b>	<b>84.26%</b>	<b>89.19%</b>	<b>75.97%</b>	84.78%

Discussion: The Biology department as a whole has an average retention rate of 83.52%, the Biomanufacturing program retention rate is higher at 84.78%, which is 2.6% percentage points higher than the colleges retention rate

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

The majority of our courses have retention rates in the 80%. Retention rates were lower in the spring of 2013, but that is not a consistent trend.

- 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?

Program	2012-2013	2013-2014	2014-2015	Total
Biology	30	31	64	125
Associate in Science in Biomanufacturing Production (AS)		2	4	6
Biomaneufacturing (CA)	13	9	28	50
Biomaneufacturing Skills (CP)		14	32	46
Biomaneufacturing Skills (CA)	17	4		21
Fast Track Biomaneufacturing Skills Certificate (CA)		2		2

- Discussion:
- The granting of certificates and degrees in the biomanufacturing program is higher than college-wide average.
- There was confusion on part of counselors about which code to put in which is why there are five degrees listed. We identified this issue and have worked more closely with our students and the counselors so that the correct codes are on the degree applications, and the correct certificates and degrees can be awarded. The Certificate of Proficiency in Biomanufacturing Skills (the correct title), the Biomanufacturing skills (CA) and the Fasttrack Biomanufacturing skills certificate (CA) all refer to the certificate of proficiency.
- The corrected table is

Program	2012-2013	2013-2014	2014-2015
Cert of Proficiency Bioman Skills	17	20	28
Cert of Achievement Biomanufacturing	13	9	32
Associates of Science Bioman Production	NA	2	4
Total certificates and Degrees	30	31	64

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

- Describe your current level of staff, including full-time and part-time faculty, classified staff, and other categories of employment.
- Biomanufacturing program is part of the Biology department, so the faculty are included in the Biology department numbers.

Full-time faculty headcount \_\_\_\_1\_\_\_\_ teaching courses in Biomanufacturing program, 1 fulltime faculty member as program coordinator in addition to teaching fulltime load in other classes in Biology department

Part-time faculty headcount \_\_\_\_1\_\_\_\_ class taught by adjunct/semester\_\_\_\_\_

Total FTEF faculty for the discipline, department, or program \_1.05 teaching hours\_\_\_\_\_

\*not counted in FTEF is time spent on community partnerships, Industry Advisory board meetings and industry engagement, job placement, work on grants, lab prep, lab orders, collection of donation of specialized supplies, and other duties necessary for a successful CTE program

Full-time/part-time faculty ratio \_\_\_\_\_

Classified staff headcount \_\_\_\_\_0\_\_\_\_\_

- Describe your current utilization of facilities and equipment.

We use A237 as the Biomanufacturing Lab and teach the lecture class in B201. B200 is shared office space for the instructors. We have a great deal of equipment that is used in preparation and performance of laboratories. The autoclave (sterilizer) and other equipment used in preparation of labs are in A237. The laboratory rooms A237, B201 store specific equipment for the biomanufacturing classes. In addition room 104 stores disposable items for the biomanufacturing program – it is critical to have a storage area for the quantity of tubes, pipettes, tips, and plates that are used for each section of the biomanufacturing lab classes.

Currently the Biomanufacturing teaching lab is A237 which is shared space with the chemistry department. The chemistry department has increased demands for new sections as well, and thus it is difficult to find time that we can expand the offerings of the Biomanufacturing program within the time constraints of the available room use. We need a dedicated Biomanufacturing lab space in addition to the labs already defined as chemistry or biology lab spaces. Our growing Biomanufacturing program requires more space not only for teaching but also to maintain proper function of the equipment.

We have a great deal of equipment that is used in preparation and performance of laboratories. An additional autoclave (sterilizer) in B205 is used when the autoclave in A237 is not working or there is a lot of use needed to autoclave

Each year it gets more difficult to sustain operation because of rising costs. We need 15,000- 20,000 per year for biomanufacturing supplies and equipment (separate from the biology department budget).

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

We have no lab technician for the biomanufacturing program, instructors have to do their own lab prep, with the assistance of student workers. The current biology department technician is retiring and the biology department requires a Lab Coordinator (to replace the retiring lab technician) and an evening Lab technician. These technicians would also support the biomanufacturing program as part of their duties.

We recently hired a full-time instructor for the Biomanufacturing program to give it stability and create more opportunities for increased offerings of the course work – not only additional sections of introductory Biomanufacturing courses required for the one semester certificate, but also the additional courses in the second year leading to an AS in Biomanufacturing. Release time/extra service time for faculty to assist

students in job placement and tracking that job placement as well as working with industry partners in gathering donations and community partnerships is another need.

We need a half-time program coordinator to create more opportunities for pursuing grants and interacting with community partners. The coordinator would also engage with employers and work to develop internships as well as pursue donation opportunities.

We need 20 hours of student assistants/month for the Fall and Spring semesters, and if we start offering summer classes we would need that time in the summer as well. We also need tutors to help students be successful in our courses.

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

New laptops to replace those several years old that do not properly run on new software. Some laptops will be dedicated to specific pieces of equipment that use proprietary software in addition to the laptops used by the students in the classroom.

IPads for student use for electronic record keeping of batch records - this is a developing industry standard

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

We need a dedicated biomanufacturing lab, we currently share space with chemistry which means it is difficult to add in more sections of lab classes due to time conflicts.

Lab preparation space is desperately needed, currently there is no separate prep space for biomanufacturing program it must be done in the biomanufacturing lab, working around scheduled biomanufacturing and chemistry classes.

We have a facilities request to identify space for a grant-funded clean room to serve the growing biomanufacturing program. We have been working on establishing a clean room for training students for quite some time.

Adjust the class sizes to more realistic levels – not requiring class maximums of 35 for a lab with 27 stations, or requiring a class size of 20 when there are only 24 lab stations. Lower enrollment is actually better for CTE classes as the hands on skills require more oversight from the instructor and more time spent with each piece of equipment.

In addition, do not cancel CTE classes due to “low” enrollment. This semester we were going to offer two sections of the introductory Bioman class (Biol 75). Because the enrollment is set to 24, the “low enrollment” of 12-14 in each class meant that we cancelled one section, assuming that the students would all change their schedules to make 1 “full” section instead of two “low enrolled” sections. Instead we lost most of the students from the cancelled section. They did not change their schedules and we do not know if they will try to enroll again for spring semester.

We need a new Science building or STEM center with more and better-designed space

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

---

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

### Part A.

- Discuss how faculty and staff have engaged in institutional efforts such as committees, presentations, and departmental activities. Please list the committees that full-time faculty participate in.
- We are a very active department, with all full-time faculty participating in a variety of ways at the college and district levels.
- Leslie Blackie – Biomanufacturing Program Coordinator, Laney CTE committee chair, CoChair District CTE committee, currently on 2 TRC committees, Budget Advisory Committee
- Doug Bruce – Biomanufacturing Lab Manager, Sustainable Peralta committee member
- Discuss how faculty and staff have engaged in community activities, partnerships and/or collaborations.  
Employer engagement and placement of graduates is one of the most important aspects of running our program, but little consideration is given to it within our institution. As faculty, we are pulled in so many directions with all the things we have to do so it is hard to make time for this.  
We have had tours and networking events with Impax Laboratories, Berkeley-Emeryville Bioscience (BEBIO), Bay Area Life Tech (BALT), Biolytic, Nutel, CLSA (formerly Bay Bio) CMC Biologics, Genentech, Biorad, Kelly Scientific, Aerotek, Penumbra, and Parenteral Drug Association. We have participated with Biolink Depot and Bayer to receive donations for the Laney Biomanufacturing program
- Discuss how adjunct faculty members are included in departmental training, discussions, and decision-making.  
Adjunct faculty members are included in departmental meetings as well as biomanufacturing faculty specific meetings. Adjunct faculty are mentored by fulltime faculty as they teach curriculum in the biomanufacturing department. Also, adjunct faculty are encouraged to go to professional development conferences ,for example, Biolink or local Biotech Marketplace organized by the Deputy Sector Navigator.

## Part B.

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

Job placement is 68% - 85 jobs for 125 students who have completed the program from Fall 2012 to Spring 2015

We are able to do some tracking through LinkedIn and keeping in touch with mass emails to graduates. All of those placements are certificate holders (either one semester or two semester) except for a handful of A.S. degrees. Our first cohort of A.S. degree students graduated in May 2014.

For placement we work with recruiting and staffing agencies like Kelly Scientific, Aerotek, Bayside Solutions, Lab Support, BBSI, and a few others. Over 95% of all placements are through one of the staffing agencies as a temp-to-perm, contract position. Over time we are seeing more of these graduates get converted to permanent.

The starting wages for graduates ranges between \$15-\$19 per hour depending on the company and the position. Typical job titles are manufacturing technician, production builder, glassware technician, and media preparation technician. Some students will start higher if they have relevant experience (for example, a student who was formerly at UPS became a package inspector/operator at Genentech) or a prior degree. We have seen some start in the \$22-\$24 per hour in these cases. Typical job titles are QC Inspector, Cell Culture Technician, Document Control Specialist, and QA Analyst. The growth potential is very good in this industry. We have one student who came through the program in 2012 with a prior BA in a non-science discipline and is now making over \$80,000 per year at Genentech.

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

188 middle skill job opening in biotechnology totals 188 annual opening in the SF Bay area

Evidence: Making use of Labor Market Data

<http://coeccc.net/documents/Making%20Use%20of%20Labor%20Market%20Information%20FINAL.pdf>

Life Sciences and Biotech Middle Skills Workforce in California October 2014

<http://doingwhatmatters.cccco.edu/portals/6/docs/LS%20Biotech%20Middle%20Skills%20Workforce%20in%20OCA%20OCT2014.pdf>

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

We work closely with Kelly Scientific and Aerotek agencies to aid students in resume writing, interview skills and job placement. We have been active participants in the Laney Career Fairs held in Spring and Fall semesters, inviting our industry partners as well as our students to participate..

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

Advisory Board members

Name Title Company/Agency

1. Audrey Holt Document Specialist, GMP Genentech
2. Palmer Lam Associate Director Manufacturing BioMarin
3. Andrew Huie Associate Director Manufacturing Xoma
5. Jon Blackie Sr. Director Business Process Integration BioMarin
6. James, DeKloe PhD Southwest Regional Director CAL\_ABC



7. Vy Nguyen, PhD CMC Biologics
8. James Gardner Consultant
9. Raya Zion Career and Job Services Consultant Laney College

Please see attached Industry Advisory Board minutes

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

The Industry Advisory Committee members advise on curriculum development and the knowledge required by the students for effective placement and continued employment in the biomnaufacturing workforce. For instance, at our latest IAB meeting there was a lot of discussion of the importance of “root causal analysis” and what are the processes that are introduced when errors occur in documentation or procedure in the workplace. As a consequence we have added assignments on specific root causal analysis, and deliberately introducing errors into the procedure so that students have to use critical thinking skills to solve the problem. In addition, IAB members have offered the opportunity to bring small groups of students into the workplace when the equipment is not in use so that students can have “hands on experience” with industry scale equipment. Students then understand the “lab scale” model equipment that is being used in the teaching labs and how it relates to the workforce. IAB members also advise on new equipment to be purchased to better facilitate training of students

We have had tours and networking events with Impax Laboratories, BEBIO, Biolytic, Nutel, CMC Biologics, Genentech, Biorad, Kelly Scientific, Aerotek, Penumbra, and Parenteral Drug Association. We have participated with Biolink Depot and Bayer to receive donations for the Laney Biomanufacturing program.

- Does your program require state or national licensing? Please explain. What is your licensing status?  
No
- Do your students participate in third party certifications? What are their success rates (include the # of students, # of certifications, etc.).  
No
- Is your discipline/department/program working with a Deputy Sector Navigator? If so, in which sector? Briefly describe your discipline/department/program’s work with the Deputy Sector Navigator.  
The Biomanufacturing program works with Deputy Sector Navigator Josie Sette. We attend regional meetings held by the DSN and receive updates on programs and information important for the Laney Biomanufacturing Program from the DSN.
- In which ways is your discipline/department/program collaborating with other community colleges in the region? What similar programs exist in the surrounding area or nearby colleges?  
Similar Biotechnology and Biomanufacturing Programs at Solano College, Contra Costa College, Ohlone College, City College of San Francisco, Berkeley City College of the Peralta district.

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

Yes, the Biomanufacturing is participating in several grants.

- Participating in Grants

Grant Name	Granting Agency	Grant Goals
TAAACCT	Department of Labor	Funds dedicated to helping workers dislocated from employment due to globalization of trade
Perkins	Core federal funds allocated by formula by the State Chancellor's office	All Peralta CTE programs receive some funding based on their core indicators (performance and need)
CTE enhancement funds	One time state funds	All funds are for strengthening CTE programs at the Peralta Colleges
AB 86 Adult Education	Funds to Regional consortium	We plan to identify 4-5 CTE "bridge" programs that we will develop and integrate with our Adult School partners. Possibly starting with our CAA pathways
CTE transitions	Perkins dollars dedicated to helping CTe students transition from secondary to postsecondary education and the world of work	Bolster enrollment of well-prepared students via early outreach, information, and the creation of more seamless transitions from one educational segment to another in all CTE programs
Career Pathways Trust	California Department of Education funds	Build and strengthen CTE pathways across four sectors: Health Science & Biomed; ICT; EngAdvMan; Law & Public Service
BAWFCC	San Francisco Foundation	Laney is working with CBO partners creating a "JumpStart to Biomanufacturing" bridge program to support students to enter that pathway.

## 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.

Our faculty are comfortable with classroom and other technology but the requirements of teaching in a CTE program has more specialized equipment needs in the laboratory.

We need to keep our classes and faculty up-to-date with the latest industry trends. There are a number of hands-on industry trainings but the facilities where they take place are outside of California (e.g., North Carolina, Maryland, Wisconsin). The registration fees range anywhere from \$1100 to over \$3300, even with an academic discount. Once you factor in the flight, room and board, and other expenses, a week-long training could cost over \$5000. Many of these trainings are available over the summer when instructors are more likely to be available.

Attending conferences and regional meetings is another important area of professional development and allows faculty the opportunity to exchange ideas with colleagues of other institutions teaching similar programs to our biomanufacturing program.

Another possibility is to pursue some type of faculty externship with an industry partner. This has been done successfully by other colleges using grant funds. One of our industry advisory board members, CMC Biologics, seemed open to the possibility of doing short on-site trainings during their shutdown periods. This would be a far more economical solution, but finding an industry partner who would agree to this may be a challenge.

Employer engagement and placement of graduates is one of the most important aspects of running our program, but little consideration is given to it within our institution. As faculty, we are pulled in so many directions with all the things we have to do so it is hard to make time for this.

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

There is training available through the college for use of the Moodle online platform. In addition colleagues in the department meet to discuss issues, problem solve and brainstorm effective teaching techniques using Moodle to support the face to face classes as well as discussion of the one online course (Biol 77) taught using Moodle. Our data presented above shows we do well with DE and this is sufficient.

## 10. **Discipline, Department or Program Goals and Activities:**

- Briefly describe and discuss the discipline, department or program goals and activities for the next three years, including the rationale for setting these goals. NOTE: Progress in attaining these goals will be assessed in subsequent years through annual program updates (APUs).
- 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: : The biomanufacturing faculty will be updating out Course Outlines of Record and include more specific assessment methods in our CORs. We will also be sending our CORs (where appropriate) to the state for approval for Biotech CID numbers

- **Goal 2. Assessment:**

Activities and Rationale: The biomanufacturing program has been a campus leader in assessment. We will continue to assess SLO each semester in each class to fulfill the established three year cycle plan. SLO assessment data from several classes will then be compiled as part of the PLO report. Our current cycle is Fall 2013 – Spring 2016

- **Goal 3. Instruction:**

Activities and Rationale: Our goal is to adjust the class sizes to more realistic levels – not requiring class maximums of 35 for a lab with 27 stations, or requiring a class size of 20 when there are only 24 lab stations. We want to open more sections to our biomanufacturing courses and better setup the biomanufacturing lab to mimic the workplace. To do this we need a clean room and dedicated Biomanufacturing lab as well as a new Science building or STEM center to accommodate our needs.

- **Goal 4. Student Success:**

Activities and Rationale: We need a college researcher or district research to help us determine our equity issues in the program, so we can clarify achievement gaps and form an action plan for greater student success.

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

Activities and Rationale: We will continue to meet with our Industry Advisory Board to ensure relevancy in our program as well as continue to develop community partnerships and participate in Biotech meetups and conferences for our professional development. Biomanufacturing faculty participate at a high level with the college.

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

# Appendix A

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

College: Laney College

Discipline, Department or Program: Biomanufacturing Program

Contact Person: Leslie Blackie

Date: October 30, 2015

Resource Category	Description	Priority Ranking (1 – 5, etc.)	Estimated Cost	Justification (page # in the program review narrative report)
<b>Human Resources: Faculty</b>				
<b>Human Resources: Classified</b>	Lab Coordinator (to replace retiring lab technician), night technician. ½ time Grant and Program coordinator	1 2		P 13
<b>Human Resources: Student Workers</b>	Student workers each semester (including summer) to help prep labs, work with students and clean up labs	2		P 14
<b>Technology</b>	New laptops to replace those several years old that do not properly run on the proprietary software for biomanufacturing equipment. iPads for student use for electronic record keeping (a developing industry standard)	1		P14
<b>Equipment</b>	Equipment (Autoclaves in A237 and B204) needs to have service contracts to ensure reliability	2	10,000	P14

<b>Supplies</b>	15,000 per year to accommodate growing costs of running labs and consumable lab supplies	1	15,000	
<b>Facilities</b>	Space for a dedicated Clean room -prep space for bioman prep -a new science building/Stem center	3 3 4		P14
<b>Professional Development</b>	Conference attendance to learn new techniques, training on new equipment and maintain currency in the Biomanufacturing field	5	2,000	

## Appendix B

### PCCD Program Review Alignment of Goals Template

College: \_\_\_\_\_Laney College

Discipline, Department or Program: \_Biomanufacturing Program

Contact Person: Leslie Blackie

Date: \_October 30, 2015

<b>Discipline, Department or Program Goal</b>	<b>College Goal</b>	<b>PCCD Goal and Institutional Objective</b>
1. The biomanufacturing faculty will be updating out Course Outlines of Record and include more specific assessment methods in our CORs. We will also be sending our CORs (where appropriate) to the state for approval for Biotech CID numbers	# 2 Accreditation: Ensure a collaborative process to successfully complete the necessary actions that lead to the reaffirmation of Laney College's accreditation on an unconditional (nonwarning) status	A. Advance Student Access, Equity and Success  C. Build Programs of Distinction
2. The biomanufacturing program has been a campus leader in assessment. We will continue to assess SLO each semester in each class to fulfill the	# 3 Assessment: Ensure completion of the Assessment cycle for SLOs and PLOs	A. Advance Student Access, Equity and Success

<p>established three year cycle plan. SLO assessment data from several classes will then be compiled as part of the PLO report. Our current cycle is Fall 2013 – Spring 2016.</p>		
<p>3. Our goal is to adjust the class sizes to more realistic levels – not requiring class maximums of 35 for a lab with 27 stations, or requiring a class size of 20 when there are only 24 lab stations. We want to open more sections to our biomanufacturing courses and better setup the biomanufacturing lab to mimic the workplace. To do this we need a clean room and dedicated Biomanufacturing lab as well as a new Science building or STEM center to accommodate our needs.</p>	<p># 4 Resources: Increase, develop and manage the College’s resource capacity in the areas of facilities, technology, peronnel, finances and public and private partnerships, in order to advance the quality of education provided. # 1 Student Success Develop new and strengthen existing interventions and strategies to increase student access and success.</p>	<p>A. Advance Student Access, Equity and Success  E.Develop and Manage Resources to Advance our Mission</p>
<p>4. We need a college researcher or district research to help us determine our equity issues in the program, so we can clarify achievement gaps and form an action plan for greater student success.</p>	<p># 1 Student Success Develop new and strengthen existing interventions and strategies to increase student access and success.</p>	<p>B. Advance Student Access, Equity and Success</p>
<p>5. We will continue to meet with our Industry Advisory Board to ensure relevancy in our program as well as continue to develop community partnerships and participate in Biotech meetups and conferences for our professional development. Biomanufacturing faculty participate at a high level with the college.</p>	<p># 2 Accreditation: Ensure a collaborative process to successfully complete the necessary actions that lead to the reaffirmation of Laney College’s accreditation on an unconditional (nonwarning) status</p>	<p>D. Strengthen Accountability, Innovation and Collaboration</p>

# Appendix C

## Program Review Validation Form and Signature Page

**College:**

**Discipline, Department or Program:**

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### Part I. Overall Assessment of the Program Review Report

Review Criteria	Comments: Explanation if the box is not checked
<input data-bbox="105 1486 151 1535" type="checkbox"/> 1. The narrative information is complete and all elements of the program review are addressed.  <input data-bbox="100 1667 144 1715" type="checkbox"/> 2. The analysis of data is thorough.  <input data-bbox="100 1818 144 1866" type="checkbox"/> 3. Conclusions and recommendations are well-substantiated and relate to the analysis of the data.	



<input type="checkbox"/> 4. Discipline, department or program planning goals are articulated in the report. The goals address noted areas of concern.	
<input type="checkbox"/> 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
<input type="checkbox"/> 1. 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.
<input type="checkbox"/> 2. Conditionally Accepted.	
<input type="checkbox"/> 3. Not Accepted.	

**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



