

Program Approval and Notice of Intent

Application

November 2013

OVERVIEW:

The program approval process outlined by the California Community College Chancellor’s Office requires that all requests to add new programs or certificates and/or to make substantial changes to any existing college’s inventory of Career Technical Education (CTE) programs include a recommendation from the Regional Consortia. Instructions and the application form for the regional consortia recommendation are posted on our website at LAOCRC.org.

The process for obtaining a recommendation from the Regional Consortia is intended to inform and engage our region in creating programs for the Los Angeles and Orange County colleges, and to foster a spirit of collaboration and coordination that results in viable choices for Career Technical Education (CTE) courses/programs across the region.

The Los Angeles and Orange County Voting Members should submit **Requests for Program Approval and Notice of Intent** by the deadlines below:

Deadlines for application submissions (Program Approval and Notice of Intent)	
Submission Deadline:	LAOCRC Meeting Date:
September 6, 2013	September 19, 2013
October 11, 2013	October 24, 2013 (CCCAOE Oct.23-25)
November 8, 2013	November 21, 2013
December 6, 2013	December 19, 2013
January 3, 2014	January 16, 2014
February 7, 2014	February 20, 2014
February 28, 2014* (*note- March deadline is in February)	March 13, 2014 (CCCAOE March 12-14)
April 4, 2014	April 17, 2014
May 2, 2014	May 15, 2014
June 6, 2014	June 19, 2014

**APPLICATION FOR PROGRAM APPROVAL:
NEW or SUBSTANTIAL CHANGE or LOCALLY APPROVED
(This application may not exceed 3 pages)**

<u>Biotechnology</u> <small>PROPOSED PROGRAM TITLE</small> <u>Los Angeles Trade-Technical College</u> <small>COLLEGE</small> <u>Los Angeles Community College District</u> <small>DISTRICT</small> <u>August 27, 2014</u> <small>PROJECTED PROGRAM START DATE</small> GOAL(S) OF PROGRAM (CHECK ALL THAT APPLY): <input checked="" type="checkbox"/> CAREER TECHNICAL EDUCATION (CTE) <input type="checkbox"/> TRANSFER <input type="checkbox"/> OTHER TYPE OF PROGRAM (CHECK ALL THAT APPLY): <input type="checkbox"/> A.A. DEGREE <input checked="" type="checkbox"/> A.S. DEGREE CERTIFICATE OF ACHIEVEMENT: <input checked="" type="checkbox"/> 18+ semester (or 27+ quarter) units REASON FOR APPROVAL REQUEST: (CHECK ONE) <input checked="" type="checkbox"/> NEW PROGRAM <input type="checkbox"/> SUBSTANTIAL CHANGE <input type="checkbox"/> LOCALLY APPROVED	<u>Vincent Jackson</u> <small>CONTACT PERSON</small> <u>Dean of Academic Affairs</u> <small>TITLE</small> <u>(213)763-7035</u> <small>PHONE NUMBER</small> <u>jacksovc@lattc.edu</u> <small>E-MAIL ADDRESS</small>
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<i>Recommended Taxonomy of Program (TOP) Code</i>	0430.00
<i>Units for Major-Degree</i>	33
<i>Total Units for Degree</i>	60
<i>Required Units-Certificate</i>	33

1. Insert the description of the program as it will appear in the catalog.

The LATTC Biotechnology Certificate and AS Degree Program is designed to meet the needs of vocational/technical students who wish to acquire the necessary skills in a Biomanufacturing career, and also the needs of transfer students who wish to complete their first two years of education in a community college.

2. Provide a brief rationale for the program.

Historically AS degree programs in the sciences are not common. As the U.S. is recovering from the economic recession, more students are interested in degree program options in which they can gain useful training for immediate employment or they can complete the first two years of education at a community college (with a much lower tuition than the universities) before they transfer and obtain a bachelor’s degree in a science-related field.

3. List all courses required for program completion, including core requirements, restricted electives and prerequisites.

COURSES	Course No.	Course Title	Units
Biology	3	Introductory Biology	4
Microbiology	20	General Microbiology	4
Chemistry	51	Fundamentals of Chemistry	5
Biotechnology	1	Introduction to Biomanufacturing I	4



LAOCCRC is supported by the CA Community College Chancellor’s Office and Carl D. Perkins IV grant #13-150-003.

Steven Glycer, Chair • Dr. Lynn Shaw, Vice Chair

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Los Angeles and Orange County Regional Consortia

“Doing What Matters for Jobs and the Economy”

Biotechnology	2	Introduction to Biomanufacturing II	4
Process Plant Technology	102	Process Measurement and Control Fundamentals	3
Process Plant Technology	103	Process Plant Equipment	3
Process Plant Technology	104	Introduction to Process Plant Safety	3
Process Plant Technology	214	Regulations and Policies	3
Mathematics	114 or 115	Elementary Algebra	5

4. Summarize the Labor Market outlook (including citation of the source of data) for students exiting the program.

Regional: There are 3 major regions within California leading the biotechnology industry: The greater San Francisco area, Los Angeles/Orange and San Diego/Imperial. Currently, the Los Angeles/Orange region has 41% of the businesses with the most employees in over 80,800 jobs (Figure 5A). This region also has the highest sales revenue at \$23.6 billion. The greater SF area and San Diego/Imperial both have \$5-6 billion in revenue.

Biotechnology Firms by Location with Employment and Revenue

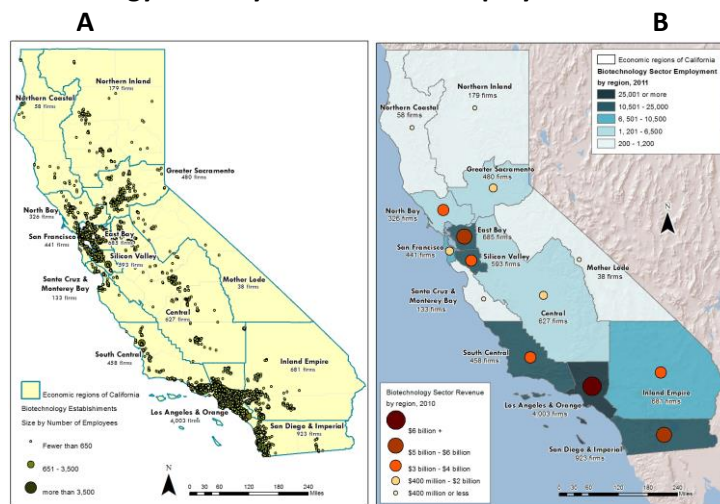


Figure 5. Biotechnology Firms by location. A. Location of Biotechnology Firms. Highest concentration is in the Los Angeles/Orange Region. B. Biotechnology firm employment and revenue by location. The Los Angeles/Orange region has the highest employment at over 29,000 and highest revenue at over \$6 billion.

Projections for 2012-2022 show that the Bay Area will offer the most biotechnology jobs at more than 15,000. Second, the Los Angeles and Orange County region is projected to offer 10,000-15,000 biotechnology jobs. The southern border region (San Diego) is projected to offer 5,000-10,000 biotechnology jobs (Figure 6). These biotechnology jobs include pharmaceutical and medicine manufacturing, a sector that applies to our biomanufacturing emphasis within biotechnology.

Projected Biotechnology Jobs by Economic Region, 2010-2020

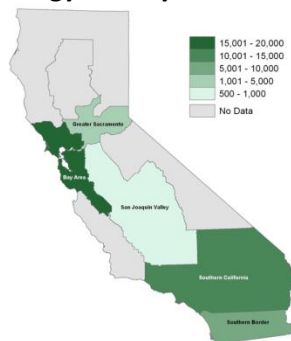


Figure 6. Projected Biotechnology Jobs by Economic Region, 2012-2020. The Bay Area followed by Southern California is projected to offer the most jobs at 15,001-20,000 and 10,001-15,000 respectively (1).

A survey was conducted to specifically address the local current labor market data and near-future hiring prospects for the job titles of: process operator, biotechnology, biomanufacturing, science, or manufacturing technician. Surveys were sent to 9 industry partners located within the local region: [Grifols Biologicals](#), [Wave Front Technologies](#), [Physicians Formula](#), [Baxter](#), [Amgen](#), [Phenomenex](#), [Positive Lab Services](#), and [Analytics](#). The types of industries who participated in the survey included: Water Treatment, Pharmaceutical, Biomanufacturing, Environmental, and Biotechnology.

These organizations ranged in size as well. Two of the smaller organizations participating in this survey have 19-20 total employees. Two mid-size organizations have 500-700 employees, and the largest participating organization has a total of 1,745 employees (both full-time and part-time employees have been accounted for). A summary of the survey conducted with the aforementioned companies show results as follows:

- Of the companies that were surveyed and whom responded, the total number of full-time employees is 2,928. Of those same organizations, the total number of part-time employees is 37.
- Of the total number of employees 27.5% are working as full-time process operators, biotechnology, biomanufacturing or manufacturing technicians: 797
- The number of part-time or contract employees that are process operators, biotechnology, biomanufacturing or manufacturing technicians: 7
- The hourly wage for an entry-level process operators, biotechnology, biomanufacturing or manufacturing technicians ranged from: \$10.00 - \$22.00. Three companies had starting wages under \$14.00/hour and two companies had starting wages over \$15.00/hour.
- All companies surveyed indicated that within the last 3 years, they hired full-time process operators, biotechnology, biomanufacturing or manufacturing technicians. The total numbers of hires within all the companies who were surveyed and responded broken down by year are: 2011: 30 2012: 43 2013: 47. Of the total number of current employees within the organizations surveyed employed as process, bioscience or manufacturing technicians (804) 121 were recently employed within the last 3 years, which is equivalent to 15% of the workforce for those positions.

Footnotes:

- Employment Development Department: State of CA. “Biotechnology in California.” Labor Market Information Division (April 2013), www.labormarketinfo.edd.ca.gov (insert pdf link), accessed on January 29, 2014.
- CareerOneStop. “Occupation Profile,” <http://www.careerinfonet.org/>, accessed on January 28, 2014).
- Biotechnology Industry Organization, “State Bioscience Initiatives 2008: Technology, Talent and Capital,” June, 2008, <http://www3.bio.org/local/battelle2008/State_Bioscience_Initiatives_2008.pdf>, accessed on February 11, 2013.
- Economic and Workforce Development through the California Community Colleges. “Sector Profile: Biotechnology”, (2013) http://www.coeccc.net/documents/dwm_sector_biotech_13.pdf, accessed on January 29, 2014.

5. List similar programs at other colleges in the Los Angeles and Orange County Region, which may be adversely impacted. (complete the chart)

There are no other programs in the Los Angeles and Orange County region that offer Biotechnology with a specific emphasis on Biomanufacturing.

6. Include other information you would like to share.

The LATTC Biotechnology program is designed to meet the needs of students who wish to acquire the necessary skills in a Biomanufacturing career, and also the needs of transfer students who wish to complete their first two years of education at a community college. This is the only AS degree program in the Greater Los Angeles and Orange Country Region with a strong emphasis in Biomanufacturing. It will serve as a model for our sister colleges. LATTC also has CTE programs in Chemical Technology and Process Plant Technology, which have complimentary aims, but different emphases of industry.



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