

2019-20 Biotechnology Annual Program Plan

I.A. Program Profile: Purpose

Describe the program(s) to be reviewed. What is the purpose of the program and how does it contribute to the mission of Skyline College?

Narrative

Biotechnology contributes to the College mission and goals by providing preparation for transfer to a baccalaureate institution and for workforce development. We are developing a strong connection to our feeder schools with our 400 level dual enrollment courses and are planning on creating a robust curriculum for our post baccalaureate population. The goals of BTEC courses include providing tools for students to make wise decisions regarding their professional careers, and to evaluate the ethics of their craft. We are committed to the strategic priority of providing learning opportunities that prepare students for their future careers. Courses numbered 100 and 200 are meant to articulate with the Community College Bachelors programs at Solano and MiraCosta Colleges. The short certificates and coop programs are meant to gain experiences for students under a cGMP environment. The core program for BTEC majors consists of two courses, BTEC 400 (Intro to biotech) and BTEC 170/171 (Biology for Biotech). The 100 level courses are General education that meet the needs of students even if they do not go on in BTEC. The 200 level course are designed primarily to advance the students articulation with other Biotechnology Manufacturing programs as well as to develop work related skills. The 400 level courses can be taught as Dual enrollment with the high schools and are meant to facilitate matriculation of students to Skyline. The primary goal of this program is to prepare underrepresented students for employment in local biotech companies. We are working with local feeder high schools to move students into biotech by aligning and articulating our Btec courses with the 1 or 2 year experiences at the high schools. We are also looking to prepare students with a bachelors to go into the biotech work force.

Associated Objectives

[1162-Course Enrollment](#)

I.B. Program Planning Team

Annual program planning is intended to be a collaborative process which promotes dialogue and reflection. Please identify all individuals who contributed to or shaped the narrative. Include names and the title or role of each person.

Narrative

Jing Folsom

Nick Kapp

Associated Objectives

[1162-Course Enrollment](#)

II.A. Analysis: Progress on Prior Program Objectives (Goals) and Activities

Describe the progress made on previously established program objectives (goals) including identification of achievements or areas in which further effort is needed. New programs which have not yet established CPR/APP objectives should discuss progress on program implementation or activities.

Narrative

BIOL 170 and BTEC 170 are being assessed for Information Literacy (SP) citizenship by the end of the 2019-2020 cycle. BTEC 400, BTEC 150 and BTEC 210 will be assessed for Information Literacy citizenship by the end of the 2020-2021 cycle.

Associated Objectives

[1162-Course Enrollment](#)

II.B. Analysis: Program Environment

Describe any recent external or internal changes impacting the program or which are expected to impact the program in the next year. Please include when the specified changes occurred or are expected to occur.

Narrative

Our main challenge is that our, on campus BTEC course attendance numbers are low. We are working with the local high school districts, SSF, Sequoia, San Mateo as well as SF schools to provide dual enrollment and to recruit more students to our program. It is hypothesized that Biotechnology is a relatively unknown industry even this area and that we are competing with more well established programs like nursing, surge tech ect. We are working with the Career Technical Education (CTE) department to develop an internship network and produce documents and documentation showing that students have a clear pathway to employment in biotechnology jobs in our local area.

With over 900 students attending our dual enrollment we should be able to matriculate enough to support our program. We recommend that we continue working on this process.

Internal

The BTEC program is relatively new and will have a small load as the program develops and the local industry becomes better known. Recent research into the CAA programs has shown that word of mouth is typically the best way to recruit students. We have just completed our first three years of the program and are ramping up for our fourth year. For dual enrollment we are on our third year at Carlmont High School and our second year at South San Francisco Unified School District (SSFUSD), this year we will mark our first year at San Mateo High School. Together we have over 900 students in our dual enrollment programs. Signs are positive that students dual enrolled in Biotechnology in these programs will be signing up for our program. It is important that we stay the course and continue to show students the value of Biotechnology at Skyline College. We also need better connection to counselors at these high schools in order to promote our program.

External

In the past we had an unemployment rate of less than 4.5% and seen a lot of competition between biotech companies for educated workers. With COVID-19 and Shelter In Place, companies that are deemed essential are looking to hire while other companies are laying people off. Overall there is a need for qualified employees in Biotech field. However, there still is a bias against workers who do not have a bachelors degree and the experience that our students have may not be enough for them to be employed. We are also continuing to work with Industry professional development communities such as the Parenteral Drug Association



(PDA), American Society of Quality (ASQ) and The International Society for Pharmaceutical Engineering (ISPE). Kapp and Folsom continue our partnership with Bay Area Bioscience Education Community (BABEC), and working with Genentech in developing Biotechnology curriculum.

Associated Objectives

[1162-Course Enrollment](#)

II.C. Analysis: Student Learning Outcomes (SLOs and PSLOs)

- 1) Instructional Programs Only: Describe what was learned from the assessment of course SLOs for the current and past year.
- 2) Student Service Programs Only: If PSLOs are being assessed this year (3-year cycle), describe what was learned. If no assessment was done because this is an off-cycle year, please state that this item is not applicable.

Narrative

2019-2020 academic year, we started the process of Information Literacy ISLO assessment for BTEC 170 (Not include the dual enrollment classes).

One homework-Journal Article was assigned to all students in BTEC 170/BIOL 170. Homework was submitted by students and assessed on

- 1) Information Source Relevance, Quality, and Credibility
- 2) Use of Information Ethically and Legally

Results will be submitted on May 22.

Associated Objectives

[1162-Course Enrollment](#)

[1163-New instructional equipment for teaching and learning](#)

III.A. Reflection: Considering Key Findings

Consider the previous analysis of progress achieved, program environment, and course-level SLOs or PSLOs (if applicable). What are the key findings and/or conclusions drawn? Discuss how what was learned can be used to improve the program's effectiveness.

Narrative

Skyline College and with our Dual Enrollment High School partners.

Associated Objectives

[1162-Course Enrollment](#)

III.B. Reflection: ISLOs

If your program participated in assessment of ISLOs this year:

- (1) What are the findings and/or conclusions drawn?
- (2) Does the program intend to make any changes or investigate further based on the findings? If so, briefly describe what the program intends to do.

Narrative

BTEC 170/BIOL 170 is being assessed on Information Literacy this academic year (2019-2020). And we'll analyze the findings at the end of this academic year. We'll make necessary adjustment according to the conclusion. Some other BTEC courses will be assessed in the next academic year.

Associated Objectives

[1162-Course Enrollment](#)

IV.A. Strategy for Program Enhancement: Continuation/Modification

Indicate whether the program is continuing implementation of the last CPR strategy or revising the strategy. Please describe the modifications if revisions are intended.

Note: Any new strategies should be linked to Institutional Goals through creation of objectives in the next section. If the program has not yet participated in comprehensive program review, an annual or multi-year strategy can be defined in this item.

Narrative

Skyline College Bio-manufacturing is dedicated to Career Technical Education and to our Skyline College students both on campus and with our local High Schools. We feel the program will especially serve and be useful for under representative minorities. Currently, we have two full time instructors in the Biotechnology Program teaching all certificate and associate degree related courses. We recently lost and are in the process of identifying an Internship Program Coordinator who support students with resume writing and soft skill practicing. We continue to support programs like our "Lunch & Learn" Series as well as the Science in Action series to facilitate students learning about careers. The Bio-manufacturing Student Club continues in its second year to help students form a learning community around biotechnology manufacturing.

We offer a Biotechnology Manufacturing Assistant certificate and a Biotechnology Manufacturing Technician certificate. We also offer an Associate Degrees in Biotechnology Manufacturing Technician. Furthermore we have aligned our courses to articulate with the Community College Bachelors programs at Solano Community College and MiraCosta Community College. We continue to explore articulation agreements with Biotechnology programs at schools such as UC Santa Cruz (UCSC).

Associated Objectives

[1162-Course Enrollment](#)

[1163-New instructional equipment for teaching and learning](#)

IV.B. Strategy for Program Enhancement: Action Plan and Resource Requests

Based on the most recent CPR and any desired modifications, develop an annual action plan with related resource requests. No narrative response will be entered in this section, but the objectives you create will be printed automatically in the APP report under this item.

(1) To begin, click on PLANNING at the top of the page, then CREATE A NEW OBJECTIVE. To view previously created objectives, click PLANNING at the top of the page, then VIEW MY OBJECTIVE.

(2) IMPORTANT! Make sure to associate each objective to this standard in the APP. Need help? Contact the PRIE Office for further instructions. Institutional Goals. Need help? Contact the PRIE Office for further instructions.

Narrative

Faculty will work with the library to ensure that resources are up to date.

The program is still relatively new and we need to continue to identify what our base operating budget is for materials and supplies. The High Schools cover most of our expense at the local level, however certain things like a Laboratory Inventory Management System, a strain bank and other materials will need to be shared.

We continue to seek help in hiring short term temporary lab technician, instructional aid and Internship coordinator.

Associated Objectives

[1162-Course Enrollment](#)

[1163-New instructional equipment for teaching and learning](#)

Enhanced Budget with Objectives and Task Detail

[Biotechnology Enhanced Budget with Objectives and Task Detail](#)