2016
Comprehensive Program Review

Process Technology

Table of Contents

Executive Summary	1
Section 1: Program Planning	2
Section 2: Human Capital Planning	13
Section 3: Facilities Planning	14
Section 4: Technology Planning	14
Section 5: New Initiatives	15
Section 6: Prioritization	16

Executive Summary

The Process Technology program's strengths lie in our industry vetted curriculum, faculty with more than sixty years combined experience in the industry, and our exclusive online format which allows more students to take courses, complete certificates and continue to earn degree when applicable. The opportunities for improvement include expanding the part time faculty pool, broaden outreach to high schools, to additional refineries or related industries and update our virtual simulation program. Apprenticeships and workforce placement are two key areas we will focus on in the next five years.

Our PTEC program showed substantial decreases in enrollment between 2014-2015 which our industry advisory members said it could be attributed to a slight increase in jobs being filled. One strategy put into motion was to develop new curriculum that reflected a new partnership with OSHA certifications, stackable certificates and job placement. Recently, the department chair was asked to participate in Economic and Workforce Development Program; California Apprenticeship Initiative Accelerator Grant Program. This program will develop a Safety Technician apprenticeship pathway, with training partners in industry and workforce development.

Section 1: Program Planning

Mission Statement

To prepare students for a career in the Process Technology Industry by giving them the opportunity to learn fundamental principles including, process chemistry, equipment operation, troubleshooting and communication skills, and safety and environmental principles. This preparation will allow them to perform their job duties safely, in an environmentally friendly manner, and become a valued technician in the industry.

Overview

The Process Technology (PTEC) program at Coastline Community College prepares students to become refinery, chemical and related industry operators. Process technicians are skilled plant operators, starting at a base salary of $47,000.00, who work for refining, power generation, water, oil, waste management, food manufacturing and other related manufacturing companies. Process technicians work with the latest computer control systems, work outdoors taking samples and monitor equipment, and solve problems in a collaborative environment.

The program currently employs two part-time instructors. The lead instructor and developer of the Coastline PTEC program, Ronald Smith, has a Master of Science in Instructional Design and Technology from Cal State Fullerton and after more than twenty years, has recently retired from Chevron as the Learning Systems Supervisor for the El Segundo Refinery. Randy Jewell, hired in Fall 2009, has a Bachelor of Arts Degree in English; over thirty years of experience as a Head Operator and is currently retired from Chevron as well.

The courses are offered online and all of our instructors work in the process technology field. We work with our industry partners to develop relationships that will lead to potential workforce placement. Coastline College offers an A.A. degree in Process Technology as well as two certificates.

Internal Analysis

Enrollment and FTES:
The number of enrollments in Process Technology courses in 2014-2015 showed **a substantial decrease (> -10.0%)** from 2013-2014 and **a substantial decrease (> -10.0%)** in comparison with the number of enrollments in 2012-2013.

The FTES in Process Technology credit courses in 2014-2015 showed **a substantial decrease (> -10.0%)** from 2013-2014 and **a substantial decrease (> -10.0%)** in with in comparison with FTES in 2012-2013.

Efficiency (Number of Sections, Fill Rate, FTEF/30, WSCH/FTEF):
The number of sections in Process Technology courses in 2014-2015 showed **minimal to no difference** from 2013-2014 and **minimal to no difference** in comparison with the number of sections in 2012-2013.

The fill rate in Process Technology courses in 2014-2015 showed **a substantial decrease (> -10.0%)** from 2013-2014 and **a substantial decrease (> -10.0%)** in comparison with the fill rate in 2012-2013.

The FTEF/30 ratio in Process Technology courses in 2014-2015 showed **minimal to no difference** from 2013-2014 and **minimal to no difference** in comparison with the FTEF/30 ratio in 2012-2013.

The WSCH/FTEF ratio in Process Technology courses in 2014-2015 showed **a substantial decrease (> -10.0%)** from 2013-2014 and **a substantial decrease (> -10.0%)** in comparison with the WSCH/FTEF ratio in 2012-2013.

Course Success Rate:
The course success rate in Process Technology courses in 2014-2015 showed **a substantial increase (> 10.0%)** from 2013-2014 and **a substantial increase (> 10.0%)** in comparison with the course success rate in 2012-2013. The course success rate from 2014-2015 was **minimal to no difference** than the college average (65.4%) and was **substantially higher (> 10.0%)** than the institutional-set standard for course success (55.4%).

Term Retention Rate:
The term retention rate in Process Technology courses in 2014-2015 showed **a moderate decrease (-5.0% to -10.0%)** from 2013-2014 and **a slight decrease (-1.0 to -4.9)** in comparison with the term retention rate in 2012-2013. The term retention from 2014-2015 was **substantially lower (>-10.0%)** than the college average (82.3%) and was **moderately higher (5.0% to 10.0%)** than the institutional-set standard of term retention (70.3%).

Awards (Degrees and Certificates):
The number of degrees in Process Technology in 2014-2015 showed **minimal to no difference** from 2013-2014 and showed **a substantial decrease (> -10.0%)** in comparison with the number of degrees awarded in 2012-2013.

The number of certificates in Process Technology in 2014-2015 showed **a substantial increase (> 10.0%)** from 2013-2014 and showed **a substantial increase (> 10.0%)** in comparison with the number of certificates awarded in 2012-2013.

Modality:
Since the PTEC program is entirely online, there is only one modality. The overall success and retention rates have decreased in the last year. With the transition of all courses to the new learning management system, (Canvas) instructors revised the course elements so students will have a more interactive experience with classmates and the instructor. We are optimistic and hope to see a rise in both of these rates within the next four semesters.

Demographics:
Between 2012 and 2015, the average age of students in our PTEC program shifted from the 40-49 age group to the 25-30 age group. This appears to be a result from an outreach effort by the CTE dean and department chair to the SBCC Energy Pathway Program (EPP). The program needs to develop a strategy to increase the number of female students in the program as well as other underserved populations.

Implications of Change

Enrollment and efficiency rate percentages have decreased over the past few years as a result of continued retirements within the local refineries, resulting in more employees hired, so fewer students are registering for courses. Course success rate showed an increase, which appears to be the result of online course review and increased regular substantive interaction with students, as well as continued faculty training and development. Term retention is a challenge in this discipline as students might be hired any time within the term, and not return until a later date. The shift in demographics to younger students, due to a new EPP partnership, should result in an increase in completion rates as the students are mentored by industry professionals while completing their courses with Coastline. Employment placement is the program's main focus.

During the end of the spring term 2016, the department chair interviewed two new part time instructors to develop and teach the newly approved curriculum to begin in the Fall 2016 term.

Market Assessment
The department meets with the advisory board virtually and face to face on a bi-annual basis. In 2015-2016, due to board input and market demand, the focus shifted, specifically with the emergence of the new OSHA (occupational health and safety certificate) project. New courses were approved in curriculum and it was suggested that the PTEC program hire additional adjunct faculty to ensure relevancy in the field.

Applicable Fields

Aerospace Technology
Agricultural Technology
Biotechnology
Construction Engineering
Engineering Technology
Environmental Technology
Manufacturing Technology
Marine Technology
Microtechnology and Nanotechnology
Process and Chemical Technology
Transportation Technology
Aerospace Technology

Table 1.1 Program Productivity Data for Process Technology

Academic Year	2012-13	2013-14	2014-15
CENSUS Enrollment	263	242	209
FTES	22.4	20.7	18.1
FTEF30	0.8	0.8	0.8
WSCH/FTEF	490	453	397
Sections	8.0	8.0	8.0
Fill Rate	73.1%	67.2%	58.1%
DEGREES AND CERTIFICATES			
Associate Degrees	6	4	4
Certificates	8	7	14
STUDENT DEMOGRAPHICS			
GRADED Enrollment	252	238	209
GENDER			
Female	12.3%	13.0%	17.7%
Male	86.1%	86.1%	78.9%
Unknown	1.6%	0.8%	3.3%
AGE at TERM			
Less than 19	1.6%	5.5%	4.3%
20 to 24	17.1%	10.9%	11.0%
25 to 29	19.0%	32.8%	31.1%
30 to 34	16.7%	12.2%	21.5%
35 to 39	7.1%	11.8%	17.2%
40 to 49	24.6%	21.0%	11.0%
50 and Older	13.9%	5.9%	3.8%
RACE/ETHNICITY			
African American	20.2%	24.4%	9.6%
American Indian	2.8%	0.4%	1.9%
Asian	24.2%	9.2%	13.4%
Hispanic/Latino	12.3%	17.6%	18.2%
Pacific Islander	0.0%	0.0%	0.0%
White	39.7%	43.3%	53.1%
Unknown	0.8%	5.0%	3.8%
INSTRUCTIONAL MODALITY			
Cable	0.0%	0.0%	0.0%
Correspondence	0.0%	0.0%	0.0%
Hybrid	0.0%	0.0%	0.0%
Online	100.0%	100.0%	100.0%
Self-Paced	0.0%	0.0%	0.0%
Telecourse	0.0%	0.0%	0.0%
Traditional	0.0%	0.0%	0.0%

Table 1.2 Program Review Data for Process Technology by Modality

Academic Year	2012-13	2013-14	2014-15
GRADED ENROLLMENT	252	238	209
-Overall Success Rate	60.7%	72.3%	67.9%
-Overall Retention Rate	81.7%	84.0%	78.9%

INSTRUCTIONAL MODALITY			
Cable	0	0	0
Correspondence	0	0	0
Hybrid	0	0	0
Online	252	238	209
Self-Paced	0	0	0
Telecourse	0	0	0
Traditional	0	0	0

Success Rate			
Cable			
Correspondence			
Hybrid			
Online	60.7%	72.3%	67.9%
Self-Paced			
Telecourse			
Traditional			

Retention Rate			
Cable			
Correspondence			
Hybrid			
Online	81.7%	84.0%	78.9%
Self-Paced			
Telecourse			
Traditional			

Table 1.3 Program Review Data for Process Technology by Gender

Academic Year	2012-13	2013-14	2014-15
GRADED ENROLLMENT	252	238	209
-Overall Success Rate	60.7%	72.3%	67.9%
-Overall Retention Rate	81.7%	84.0%	78.9%

STUDENT DEMOGRAPHICS			
GENDER			
Female	31	31	37
Male	217	205	165
Unknown	4	2	7
Success Rate			
- Female	19.4%	38.7%	56.8%
- Male	66.8%	77.1%	69.7%
- Unknown	50.0%	100.0%	85.7%
Retention Rate			
- Female	45.2%	58.1%	67.6%
- Male	86.6%	87.8%	81.2%
- Unknown	100.0%	100.0%	85.7%

Table 1.4 Program Review Data for Process Technology by Age Group

Academic Year	2012-13	2013-14	2014-15
GRADED ENROLLMENT	252	238	209
-Overall Success Rate	60.7%	72.3%	67.9%
-Overall Retention Rate	81.7%	84.0%	78.9%

AGE at TERM			
Less than 19	4	13	9
20 to 24	43	26	23
25 to 29	48	78	65
30 to 34	42	29	45
35 to 39	18	28	36
40 to 49	62	50	23
50 and Older	35	14	8

Success Rate			
Less than 19	25.0%	84.6%	88.9%
20 to 24	44.2%	73.1%	47.8%
25 to 29	79.2%	71.8%	66.2%
30 to 34	69.0%	69.0%	75.6%
35 to 39	61.1%	78.6%	61.1%
40 to 49	62.9%	70.0%	95.7%
50 and Older	45.7%	64.3%	25.0%

Retention Rate			
Less than 19	75.0%	84.6%	88.9%
20 to 24	90.7%	76.9%	56.5%
25 to 29	89.6%	76.9%	78.5%
30 to 34	81.0%	86.2%	91.1%
35 to 39	66.7%	92.9%	66.7%
40 to 49	87.1%	92.0%	100.0%
50 and Older	60.0%	85.7%	62.5%

Table 1.5 Program Review Data for Process Technology by Ethnicity

Academic Year	2012-13	2013-14	2014-15
GRADED ENROLLMENT	252	238	209
-Overall Success Rate	60.7%	72.3%	67.9%
-Overall Retention Rate	81.7%	84.0%	78.9%

RACE/ETHNICITY			
African American	51	58	20
American Indian	7	1	4
Asian	61	22	28
Hispanic/Latino	31	42	38
Pacific Islander	0	0	0
White	100	103	111
Unknown	2	12	8
Success Rate	51	58	20
African American	43.1%	70.7%	50.0%
American Indian	28.6%	100.0%	0.0%
Asian	67.2%	54.5%	53.6%
Hispanic/Latino	48.4%	66.7%	60.5%
Pacific Islander	0.0%	0.0%	0.0%
White	72.0%	79.6%	83.8%
Unknown	50.0%	66.7%	12.5%
Retention Rate			
African American	68.6%	93.1%	60.0%
American Indian	57.1%	100.0%	0.0%
Asian	73.8%	77.3%	67.9%
Hispanic/Latino	90.3%	71.4%	73.7%
Pacific Islander	0.0%	0.0%	0.0%
White	92.0%	87.4%	91.0%
Unknown	100.0%	66.7%	62.5%

Program Student Learning Outcome(s)

At the 2016 Spring All-College Meeting, in the discipline focused session, faculty discussed PSLO and CSLO data. Through discussions, the faculty determined their focus needed to be online course quality, course facilitation skills, include more regular assessment opportunities and revise any duplicate distribution of learning outcomes.

Curriculum Review

Minor revisions were completed within the last five years to update textbooks within the eight existing PTEC courses.

Current Certificates

We offer an A.A. degree with an emphasis in Process Technology, or a Certificate of Achievement in Process Technology. The Certificate of Achievement in Process Technology demonstrates to a potential employer that a student has an acceptable knowledge base to quickly become a productive employee in the above mentioned industries.

New certificate: Occupational Safety and Health Professional (OSHA) Certificate of Achievement

The PTEC/OSHA certificate program will produce skilled professionals who are trained to recognize, avoid, reduce and prevent workplace injuries and maintain a safe work environment within various industries such as process technology (petroleum), general industry and construction.

Table 1.6 Curriculum Review

Course #	Course Name	Date Reviewed	Status
PTEC C120	OSHA Standards for Construction Industry	2/26/16	New Course - Approved
PTEC C121	OSHA Guide to Industrial Hygiene	2/26/16	New Course - Approved
PTEC C122	OSHA Electrical Standards	2/26/16	New Course - Approved
PTEC C123	Fall Protection	2/26/16	New Course - Approved
PTEC C124	Excavation, Trenching and Soil Mechanics	2/26/16	New Course - Approved
PTEC C125	Electrical Safety and Lockout/Tagout for Construction	2/26/16	New Course - Approved
PTEC C126	Principles of Ergonomics	2/26/16	New Course - Approved
PTEC C127	Hazardous Materials	2/26/16	New Course - Approved
PTEC C128	Respiratory Protection	2/26/16	New Course - Approved
PTEC C130	OSHA Standards/General Industry	2/26/16	New Course - Approved
PTEC C132	Permit-Required Confined Space Entry	2/26/16	New Course - Approved
PTEC C134	Machinery and Machine Guarding Standards	2/26/16	New Course - Approved
Certificate of Achievement	Occupational Safety and Health Professional (OSHA)	4/15/16	New Program

External Compliance

The Process Technology Program ensures that all instruction and planning is in agreement with college, district and accreditation goals. The program is also in compliance with industry sanctioned regulations identified by the U.S. Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), Bureau of Land Management (BLM) within the Department of the Interior (DOI), and the Department of Labor (DOL).

Progress on Forward Strategy Initiative(s)

Initiative(s)	Status	Progress Status Description	Outcome(s)
Replace outdated CBT modules with modern modules that function on all web-based platforms. Produce and include simulation, video, and high-quality graphics in the curriculum.	Completed	Software Simtronics licenses purchased	The department is teaching to industry standard/regulations
Work with the State of California, Department of Industrial Regulation, Division of Apprenticeship Standards to certify the curriculum in this program for various trades	Completed	Spring 2016 New curriculum and program for OSHA courses was written and approved.	New courses will be developed to broaden the offerings to also accommodate a new apprenticeship program.
Improve Advisory Committee membership and participation	In progress /Ongoing	Since Fall 2015, six additional companies participated on advisory	Apprenticeship partnership with refineries and veterans.
Identify and map program level learning objectives and ensure student achievement. Re- validate learning objectives identified by the Center for the Advancement of Process Technology for current use.	Completed	In 2012-2013 the PSLOs were revised and updated	With advisory input and discussion, objectives were revised and further developed.
Develop new course on renewable energy and greenhouse emissions reduction	In-progress	Continued research to find qualified part time instructor	In progress

Forward Strategy

Process technology covers industries that are involved with the production of consumer goods from raw material: from soft drink bottlers to petroleum refineries to the production of electricity. This technology is essential in the production of gasoline, airplane fuel, gas, plastic soft drink bottles, glass jars and bottles, pharmaceuticals as well as food processing and wastewater treatment.

Industries Types:

- Wastewater Treatment
- Environmental Labs
- Food and Beverage
- Biotechnology
- Metals
- Aerospace
- Paints and Dyes
- Gases, Welding, And Safety Products
- Gasoline Production
- Bio-Manufacturing

Simultaneously within the next five years, these are the four initiatives:

1. Develop and produce twelve new process technology courses aligned with OSHA standards to advance students towards necessary certifications for job advancement. (SPR 2018)
2. Hire two additional part time instructors to develop the new courses by FALL 2017.
3. Participate in the state and federal apprenticeship program grants in partnership with the Coastline's Contract Education team, resulting in job placement for all students, especially veterans. The PTEC department will create a bridge with the Building Codes department to expand the opportunities for students to seek varied levels of entering the workforce.
4. Expand the PTEC advisory board membership to include experts in additional process technology industries, such as Food and Beverage, Bio-Manufacturing and Wastewater Treatment.

Section 2: Human Capital Planning

Staffing

Table 2.1 *Staffing Plan*

Year	Administrator	Management	F/T Faculty	Adjunct	Classified	Hourly
Previous year 2014-2015	Dean of CTE (1 of positions)			Instructor (2 of positions)		
Current year 2015-2016	Dean of CTE (1 of positions)			Instructor (2 of positions)		
1 year 2016-2017	Dean of CTE (1 of positions)			Instructor (4 of positions)		
2 years 2017-2018	Dean of CTE (1 of positions)			Position Title (5 of positions)		
3 years 2018-2019	Dean of CTE (1 of positions)			Position Title (5 of positions)		

The staffing plan for the PTEC program will be to add two part time instructor to meet the needs of the upcoming apprenticeship grant program and partnership with OSHA certification initiative.

Professional Development

Over the past five years, faculty attended two industry specific conferences funded through the CTE Perkins grant. Additionally, one instructor initiated the updates for the Simtronics software. The department chair attended the Online Teaching Conference in 2015 and 2016 and shared materials with the instructors as well as conducted online teaching workshops in Canvas.

Table 2.2 *Professional Development*

Name (Title)	Professional Development	Outcome
Ron Smith	Online training Simtronics	To update system and skills
Cheryl Chapman	Online Teaching Conference	shared materials with the instructors as well as conducted online teaching workshops in Canvas.
Cheryl Chapman	Coastline Summer Institute (each year)	
Ron Smith	Coastline Summer Institute (one year)	

Forward Strategy

Over the next five years, the Process Technology department plans to:

- acquire two additional part-time faculty members to boost the PTEC Department, in particular the new OSHA certificate program.
- provide more comprehensive online training and industry professional opportunities, to include conferences, focus groups and certification updates.

Section 3: Facilities Planning

Facility Assessment

This Process Technology Certificate Program is offered completely online so there are no facility needs at this time.

Forward Strategy

At this time future facility planning is not needed as the Process Technology Certificate Program is offered completely online.

Section 4: Technology Planning

Technology Assessment

As of Summer 2016, all courses at Coastline are being offered in the new learning management system, Canvas. All adjunct instructors completed the required online training course in Canvas, completed the course review process and began teaching PTEC courses in the Fall 2016. We hired two new adjunct instructors who were also trained and are now developing their online courses. The program has been using Simtronics software and we are now evaluating the to upgrade to the new version to implement usage in the program.

Forward Strategy

We plan to implement continuous course improvement workshops to explore the options available in Canvas for the instructors to integrate into their courses.

To maintain current upgrades, the PTEC program will need ongoing updates for simulation software, and newly developed mobile apps. To train faculty on the mobile suite of products, we will plan to acquire an iPad Pro and Surface Pro 4 tablet for field simulations.

Section 5: New Initiatives

Initiative 1: Expand our part time faculty pool to teach in the PTEC Program.

1. Hire two additional part time instructors in SPR 2017 to teach PTEC/OSHA courses by Fall 2017.

Initiative 2: Develop and produce twelve new process technology courses aligned with OSHA standards to advance students towards necessary certifications for job advancement. (SPR 2018)

1. Coordinate the online master courses development (faulty cohort) to ensure content is not duplicated and that instructional strategies and SLO distribution is diversified.

Initiative 3: Participate in the state and federal apprenticeship program grants in partnership with the Coastline's Contract Education team, resulting in job placement for all students, especially veterans.

1. The PTEC department will create a bridge with the Building Codes department to expand the opportunities for students to seek varied levels of entering the workforce in either area.

Describe how the initiative supports the college mission: It supports the college mission by providing experienced instructors to develop new courses, which is a direct outcome of building stronger relationships with industry partners, such as OSHA and the Energy Pathway Program (SBCC).

What college goal does the initiative align with? Select one

☐ Student Success
X Partnerships
☐ Access, Persistence and Retention
☐ Culture of planning, evidence and inquiry
Innovation
☐ Growth and efficiency

What College planning document(s) does the initiative align with? Select all that apply

X Educational Master Plan
☐ Facilities
X Staffing
☐ Technology

What evidence supports this initiative? Select all that apply

☐ Learning Outcome (SLO/PSLO) assessment
x Internal Research (Student achievement, program performance)
X External Research (Academic literature, market assessment, audit findings, compliance mandates)

Describe how the evidence supports this initiative.
Based on the emerging partnerships and new curriculum proposed, the advisory board recommended hiring key industry faculty to design, develop and facilitate these model courses.

Recommended resource(s) needed for initiative achievement:
Hire at least two additional part time faculty members.

What is the anticipated outcome of completing the initiative?
Increased enrollment with the implementation of the new OSHA (occupational health and safety) certificate and program. Increased job placement would also be an anticipated outcome.

Provide a timeline and timeframe from initiative inception to completion.
Hire two additional part time faculty members in the Spring of 2017, design and develop the new OSHA model courses (in Canvas) to be offered in Fall 2017 and Spring 2018.

Section 6: Prioritization

List and prioritize resource requests

Initiative	Resource(s)	Est. Cost	Funding Type	Health, Safety Compliance	Evidence	College Goal	To be Completed by	Priority
Master Course Development - PTEC/OSHA	CTE grant funding		One time				Spring 2017	2

List and prioritize staffing requests. For full-time positions, include a Coast District approved job description.

Initiative	Resource(s)	Est. Cost	Funding Type	Health, Safety Compliance	Evidence	College Goal	To be Completed by	Priority
Hire two part time faculty members to design and facilitate courses related to the OSHA (occupational health and safety) certificate	part time faculty (2)	$8,000 semester	Ongoing		Based on the emerging partnerships and new curriculum proposed, the advisory board recommended hiring key industry faculty to design, develop and facilitate OSHA courses.	Partnership Growth and Efficiency	Spring 2017	1