Process Technology Program Review

2011

Review Team
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Process Technology Program Review

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History of the Coastline Process Technology Program

Program Curriculum Identified

In 2002, the Center for the Advancement of Process Technology (CAPTech) was designated by the National Science Foundation (NSF) Advanced Technology Education (ATE) National Center of Excellence for Process Technology Education and was awarded a three-year grant for $3,000,000 (Advanced Technological Education (03-523)). The purpose of the grant was to produce a national alliance of two-year colleges working in collaboration with process-related businesses and industries, education, professional associations, and government to prepare a technical workforce with the knowledge and skills needed by major energy, chemical, and oil and gas producers. Coastline selected the curriculum produced by the Center for the Advancement of Process Technology as its core curriculum.

In 2007, Chevron El Segundo, an area refinery, was looking to improve their Process Technology basic skills training program that is delivered to all process technicians during their first three years of employment. The Chevron El Segundo Learning and Development Department Learning Systems Supervisor approached Coastline as a leader in the delivery of distance learning courses and in consultation with Coastline, selected the PTEC curriculum consisting of eight courses as the core curriculum based on its acceptance by industry and educational groups. A representative from the Chevron El Segundo Learning and Development Department, Ronald Smith, worked together with Coast Learning Systems (an ancillary unit of Coastline Community College) over the next year and a half to produce a version of the PTEC curriculum that could be delivered using Coastlines proprietary course management System, Seaport.

Using the Student Learning Objectives and textbooks developed by the Center for the Advancement of Process Technology we began the conversion of the classroom based lesson plans and learning activities into distance learning format. The initial course offering occurred in Spring 2008 consisting of a single course, Introduction to Process Technology. In subsequent semesters, additional courses were added: Fall 2008 – PTEC 111 Health, Safety, and Environment and PTEC113 Process Technology 1 Equipment; Spring 2009 – PTEC114 Process Technology 2: Systems and PTEC 116 Instrumentation 1; Fall 2009 – PTEC112 Quality, Process, PTEC115 Technology 3 Operations, and PTEC117 Instrumentation 2 to complete the core curriculum. An additional course from the Coastline Catalogue CIS100 Introduction to Information Systems was added to supplement student knowledge of computers that are used extensively in the Process Industry.

PTEC Program Established

A program advisory board was formed by Coastline and included representatives from several area refineries and several area utility companies. These companies agreed to provide students already employed and to consider students from the PTEC program for internships and future employment. ConocoPhillips and Chevron participated in the program by supplying employees as students. ConocoPhillips, Chevron, Exxon Mobil, and other area energy and utility companies agreed to consider internships as part of their support for the Coastline PTEC program.

During the first several semesters, students were primarily employees of Chevron and ConocoPhillips with a few students from outside the industry. As the program evolved, an increasing number of students from outside the industry have joined the program looking to start a new career in Process Technology. The combination of students from inside and outside the industry together with the asynchronous structure of the distance learning format has allowed people with unusual work schedules (such as process technicians) to participate in this training. Students not already working the industry experienced the added benefit of interacting with students currently employed allowing them to ask questions and gain insight that would not be available in classroom instruction. Chevron completed an internship class of five students in the summer of 2009.

The program currently employs three 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; over twenty years experience in the industry; and is currently employed with Chevron as the Learning Systems Supervisor for the El Segundo Refinery, in El Segundo California. Paul Betz, hired in Spring 2009, has a Bachelor of Science in Mathematics from Syracuse; over twenty-five years experience in the industry; and is recently retired from Chevron (May 2011). 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 employed as a Head Operator.

PTEC Program Current Status

Process industry jobs tend to pay well ($59,000.00 to $69,000.00 per year for a power plant operator or refinery operator respectively based on Bureau of Labor Statistics Estimates (http://www.bls.gov/oco/ocos227.htm), as well as providing long term secure employment, and excellent benefits. The recent recession had impacted the interest in the program as most of the companies that expressed original interest in hiring and internships had since greatly curtailed or stopped hiring completely. However, that trend is reversing as attrition of older workers is reaching pre-recession levels. Chevron El Segundo Refinery has hired sixty new operator trainees in 2011 including four people from the Coastline PTEC Program. This trend is expected to continue over the next several years. It is expected that other area businesses have similar plans.

The previous lack of hiring and availability of jobs in the industry; failure to promote the program as a viable career option with students; and failure to actively involve area businesses over the past several years had caused program enrollment trends to fall for the Fall 2010 semester. If this trend had continued it is possible that, based on Coast Community College district minimum enrollment guidelines, scheduled classes would be cancelled resulting in students being unable to complete a certificate of achievement. Without new students entering the program and area businesses willing to participate by hiring our students, the program could fail just as industry is beginning to hire again and companies are looking for a viable curriculum they can use to train their new employees.

The curriculum has undergone extensive quality reviews over the first two years in concert with Coast Learning Systems headed by Robert Nash. The entire curriculum was reviewed by Coast and the course instructors in 2010 and recommendations for improvement to each course have been documented and plans are underway to prioritize and implement recommendations based on available resources. Industry partners, including Chevron, have supplied resources and funding to improve the curriculum. Enlistment of additional industry partners from the Petrochemical, Energy, Water, and other process industries would enable the program to expand its applicability to these industries, thereby, expanding employment opportunities for our students. In addition, the curriculum has the potential to replace existing company fundamental safety, environmental, and equipment training programs resulting in increase enrollment and cost savings for participating businesses.

Turnover at the Dean level has resulted in stalled efforts to expand the program by failing to maintain industry partnerships and enlist new industry partners. The lead instructor, Ron Smith, is not in a position to actively solicit partnerships with other businesses because of his employment with Chevron. The previous Dean actively pursued relationships with process industry businesses and had a measure of success. However, the position has remained unfilled, resulting in deteriorating process industry relationships. Thus, expansion of the program has ceased. Unless Coastline is willing to renew it efforts in marketing this program to area businesses, the outlook for continued offering of this curriculum could be problematic.

Certificate Requirements

The Process Technology certificate program is a 25.5 unit certificate of achievement. The courses offered to obtain this certificate will give the students the basic skills needed to obtain a position as a Process Technician within a variety of industrial fields. Process technology involves every aspect of chemical plant operation and processing; extracting and refining petrochemicals and natural gas; operating refinery equipment and systems; operating power generation plants; and monitoring and controlling related process equipment and systems.

REQUIRED COURSES

PTEC C110	Introduction to Process Control	3 Units
PTEC C111	Safety, Health and Environment	3 Units
PTEC C112	Quality Management	1.5 Units
PTEC C113	Process Control I: Equipment	3 Units
PTEC C114	Process Control II: Systems	3 Units

PTEC C115	Process Control III: Operations	3 Units
PTEC C116	Instrumentation I	3 Units
PTEC C117	Instrumentation II	3 Units
CIS C100	Intro to Information Systems*	3 Units
	Total certificate units	25.5

*Computer Information Science Course

Curriculum Review

The Process Technology curriculum used at Coastline Community College consists of eight courses that are delivered in distance learning format. Three unit courses are broken down into sixteen weekly modules and the 1.5 unit course consists of eight weekly modules. Four primary learning and assessment methodologies are used to teach and assess students during the courses. Textbook reading and online information are the primary sources of information. Discussion forum topics are used for students to share and demonstrate knowledge acquired during reading and online research. Written exercises are used for students to demonstrate the ability to practice concepts and principles learned during each module. Written multiple choice/short answer quizzes and tests and used to measure student retention of information covered during the course lessons.

Textbooks and Online Information

The textbooks were originally developed as part of the 2002 National Science Foundation grant and have been updated several times as safety, environmental laws change; and advances in equipment and technology take place. The following textbooks are used for the each course:

- Introduction to Process Control: Introduction to Process Technology; Prentice Hall; 1 Student edition (May 1, 2009); 978-0137004140
- Safety, Health and Environment: Safety, Health, and Environment; Prentice Hall; 1 edition (May 1, 2009); 978-0137004010
- Quality Management: Quality Concepts for the Process Industry; Delmar Cengage Learning; 2 edition (March 13, 2009); 978-1435482449
- Process Control I: Equipment: Process Technology Equipment and Systems; Delmar Cengage Learning; 3 edition (February 4, 2010); 978-1435499126
- Process Control II: Systems: Process Technology Equipment and Systems; Delmar Cengage Learning; 3 edition (February 4, 2010); 978-1435499126
- Process Control III: Operations: Process Technology Plant Operations; Delmar Cengage Learning; 1 edition (June 8, 2006); 978-1418028633
- Instrumentation I: Instrumentation; Prentice Hall; 1 edition (May 1, 2009); 978-0137004133
- Instrumentation II: Instrumentation; Prentice Hall; 1 edition (May 1, 2009); 978-0137004133

These textbooks are used in numerous other process technology programs across the country. All of these textbooks have been updated in the last two years except for Process Technology Plant Operations that has a new edition pending in 2011. Online information found on government and industry sites such as EPA, OSHA, American Petroleum Institute, Chemical Safety Board etc. are used throughout the course for research and information.

Discussion Forums

Discussion forum topics are updated each semester in order to focus the discussion on topics that are relevant to current events. Extensive discussions take place around events such as the Texas City refinery explosion, the gulf oil spill, and other current events and are related to the topic covered in the individual module. Students might discuss how pump safety or equipment inspection had a direct influence on the gulf oil spill and how an operator might have been able to prevent the incident. Each topic is worth two points and is scored by the following rubric:

Attendance/Participation in Discussion Board

Active participation in discussion activities is a key component of this course. It is expected that you will be a member of the discussions. You will be asked to contribute original, well written, and critically thought out responses to the discussions, and respond to those made by others in the class. There will be several extra credit items offered throughout the course.

Posted a well-thought-out initial post: 0-1 point

0 points – no post.

0.5 points – post was brief and did not indicate a well-thought-out work process.

1 point – post was well-thought-out with supporting documentation as necessary.

Posted at least 2 well-thought-out replies 0-1 point

0 points – no replies.

0.5 points – replies were brief (such as one sentence) and did not contribute significantly to the discussions.

1 points – replies were well-thought-out and contributed to the discussions.

Penalty for late posting of initial post (unexcused)

0.5 point subtracted if initial post is uploaded with 24 hours of final time deadline.

0.75 point subtracted if initial post is uploaded after 24 hour window.

Penalties for missed deadlines (unexcused)

1 point subtracted. Missed deadline; posted within the following week.

1.5 point subtracted. Missed deadline, posted after following week.

0 points if a discussion post is never completed.

Written Exercises

A written exercise for each learning module during the course is designed to help students demonstrate and apply the knowledge and information they learn during each weekly lessons. These written exercises will ask the student to research and report on a topic; perform an important calculation or activity; or solve a specific problem when presented with certain facts about a process. Each written exercise is worth 5 points and is turned in using the course dropbox. The exercise is scored by the following rubric:

Exercises

Each student will complete a series of workbook-style exercises. The exercises are contained in Word documents that can be downloaded from Seaport. Each student will submit the exercises by placing the completed Word document in the instructor's dropbox. Each exercise contains explicit instructions on how to complete the exercise for maximum credit.

Written Quizzes and Exams

Each course is divided into four sections of four learning modules. Knowledge assessment for each section is covered by a section quiz that consists of ten multiple choice questions worth a total of five points (0.5 points per questions). The timed quizzes are delivered via Seaport using the Squid testing system. Each of the 10 question categories has 3-5 possible questions that are assigned randomly to the student when the test is generated. There is a timed mid-term and final exam that consists of 25-30 questions. The mid-term covers information covered during the first eight weeks of the course and the final exam covers the final eight weeks. Exams are delivered the same way as the quizzes. The following rubric explains scoring for quizzes and exams:

Section Quizzes

Each student will complete a series of quizzes consisting of true false, multiple choice, fill in the blank and short answer. Questions are based on topics covered during individual course sections. The quizzes will be taken online, timed and administered at various times during the course semester (see course schedule).

Mid-term Exam

Each student will complete a mid-term consisting of true false, multiple choice, and fill in the blank. The questions are based on topics covered during first half of the course. The mid-term will be taken online, timed and administered on week eight of the course semester.

Final Exam

Each student will complete a final exam consisting of true false, multiple choice, and fill in the blank. The questions are based on topics covered during second half of the course. The final will be taken online, timed and administered on week sixteen of the course semester.

MISSED EXAMS AND LATE ASSIGNMENTS

Students are expected to take exams and submit assignments as scheduled. Make-up exams and submission of late assignments will only be permitted under extenuating circumstances. Students are expected to notify the instructor in advance of a potential conflict. Make-up exams/ new due dates will be scheduled immediately. Failure to notify the instructor in advance will result in a 5% loss of the associated point value of the exam/assignment each day it is late.

Grading Scale

Each course grading scale is based on the aggregate percentage of points achieved from scored elements completed during the course. The following is an example from Introduction to Process Technology:

A requires at least 90% or greater 142 to 158

B requires at least 80% or greater 126 to 141

C requires at least 70% or greater 110 to 125

D requires at least 60% or greater 94 to 109

F failed to meet minimum 0 to 93

Extra-credit points are offered in some cases during various courses

Course Descriptions

Introduction to Process Technology (3 Units)

Introduction to Process Technology provides an overview of various process industries (oil and gas, chemical, mining, power generation, pulp and paper, water and waste water treatment, food and beverage, and pharmaceutical), basic chemistry, basic physics, safety, health, environment and security, quality, teams, process drawings, and process equipment. These basic topics are covered in more detail in other process technology courses. The Intro course curriculum consists of sixteen

weekly modules and the following knowledge assessment tools designed to measure Student Learning Objectives:

- Fourteen discussion forum topics (2 points each)
- Fourteen written exercises (5 points each)
- Fourteen safety discussion topics (1 point each)
- Four section quizzes (5 points each)
- Mid-term and Final Test (20 points each)

Safety, Health, and Environment (3 Units)

The purpose of this course is to provide an introduction into the field of Safety, Health, & Environment within the process industry. Within this course, students will be introduced to various types of plant hazards, safety and environmental systems, equipment, and regulations under which plants are governed. This course will introduce various types of plant hazards, safety and environmental systems, equipment, and regulations. At the end of this course the student will be able to list, describe, and analyze responses associated with industrial accidents that have impacted safety, health, and the environment. Design a safety, health, and environmental accident response plan. The Safety course curriculum consists of sixteen weekly modules and the following knowledge assessment tools designed to measure Student Learning Objectives:

- Five discussion forum topics (2 points each)
- Ten written exercises (5 points each)
- 10 section quizzes (5 points each)
- Mid-term and Final Test (20 points each)

Quality (1.5 Units)

The purpose of this course is to provide an introduction to the field of Quality within the process industry. Students will be introduced to many process industry-related quality concepts, including operating consistency, continuous improvement, plant economics, team skills, and statistical process control (SPC). At the end of this course students will be able to evaluate the customer and quality situations and choose an appropriate positive customer service or quality control solution. Understand and evaluate quality programs significant to the process industry today such as ISO 9000 and Six-Sigma.

- Eight discussion forum topics (2 points each)
- Eight written exercises (5 points each)
- Mid-term and Final Test (20 points each)

Process Technology I: Equipment (3 Units)

The purpose of this course is to provide an introduction to the field of equipment within the process industry. Students will be introduced to many process industry-related equipment concepts including purpose, components, safe operation, and the process technician's role for operating and troubleshooting the equipment. At the end of this course students will be able to describe the function of process equipment; create a Process Flow Diagram outlining the path of resources through production and ending with the final products; and assess equipment needs based on a given scenario.

- Fourteen discussion forum topics (2 points each)
- Fourteen written exercises (5 points each)
- Four section quizzes (5 points each)
- Mid-term and Final Test (20 points each)

Process Technology II: Systems (3 Units)

The purpose of this course is to study the interrelation of process equipment and process systems. Students will be able to arrange process equipment into basic systems, describe the purpose and function of specific process systems, explain how factors affecting process systems are controlled under normal conditions, and recognize abnormal process conditions. At the end of this course students will be able to create a system-wide process flow diagram; compare different process systems by function and category; use process flow diagrams to troubleshoot systems; and identify the optimum system to provide the most efficient processing under various conditions.

- Fourteen discussion forum topics (2 points each)
- Fourteen written exercises (5 points each)
- Four section quizzes (5 points each)
- Mid-term and Final Test (20 points each)

Process Technology III: Operations (3 Units)

The purpose of this course is to provide an introduction to process unit operation within the process industry. Students will use knowledge of equipment, systems, and instrumentation to understand the operation of an entire unit. Students study concepts related to commissioning new plants, normal startup, normal operations, normal shutdown, turnarounds, and abnormal situations as well as the process technician's role in performing the tasks associated with these concepts within an operating unit. At the end of this course students will be able to compare monitoring requirements for the various equipment types within a process unit; given an emergency scenario, select and diagram the corrective action that needs to be taken; and access risks associated with tasks and activities performed by process technicians.

- Fourteen discussion forum topics (2 points each)

- Fourteen written exercises (5 points each)
- Four section quizzes (5 points each)
- Mid-term and Final Test (20 points each)

Instrumentation I (3 Units)

The purpose of this course is to study the interrelation of instrumentation used in the process industry. Students will be able to identify instrumentation loops and explain how industrial processes are controlled by instruments and loops. At the end of this course, students will be able to select the appropriate sensing or measuring device based on required function; evaluate process and instrument diagrams to understand a given a process control scheme, and assess the control loop functions based on required performance.

- Fourteen discussion forum topics (2 points each)
- Fourteen written exercises (5 points each)
- Four section quizzes (5 points each)
- Mid-term and Final Test (20 points each)

Instrumentation II (3 Units)

The purpose of this course is to study advanced instrumentation and control systems used in the process industry. At the end of this course, students will be able to explain the function of common instrumentation control loops; evaluate and troubleshoot industrial processes controls; monitor and evaluate control output signals and recommend adjustments to the process based on that output; and understand the purpose, function and action of various equipment and system emergency shutdown devices and systems.

- Fourteen discussion forum topics (2 points each)
- Fourteen written exercises (5 points each)
- Four section quizzes (5 points each)
- Mid-term and Final Test (20 points each)

Curriculum Improvement Recommendations

The Process Technology curriculum was reviewed in the second half of 2010. Chevron Corporation, Process Technology instructors, and Coast Learning Systems performed an extensive review of all eight courses and made recommendations for improvement. Priorities based on available resources will be developed for making the recommended improvements in 2011. Coastline and the Process Technology program should seek assistance from business partners and potential business partners in support of this upgrade to ensure that adequate consideration of required student knowledge and skills are addressed and included in the program.

Program Overall Recommendations

The program is currently using several computer based training (CBT) modules to supply supplemental detailed information to students in several courses. These CBTs were developed on older software platforms and some of the information is out of date. The Process Technology Program is in the process of developing CBT modules to replace the ones currently being used with up to date information and software platforms. These new modules will be included in the Spring 2012 Semester.

The curriculum and textbooks currently in use were developed for a national audience. The state of California has many laws and regulations that are not sufficiently covered by the curriculum in place. Information about California "greenhouse gas" regulations, Cal OSHA guidelines that go beyond Federal OSHA guidelines, and various equipment and system rules established by organizations such as the South Coast AQMD, the California Air Resources Board, and the California Coastal Commission. A thorough review of each course is needed to ensure the information about these rules and organizations is included in the program.

Consider the development of a stand-alone course on Energy Conservation and Greenhouse Gas Reduction. This curriculum would be a benefit to industrial companies based on California's commitment to the use of renewable energy and reduction of greenhouse gases. Most California based companies could benefit from this course whether or not they fully participate in the Process Technology Program.

Individual Course Recommendations

Introduction to Process Technology

Recommendations were made to replace the currently used Center for the Advancement of Process Technology web modules. These modules are out of date and use outdated software that does not function properly on later web browser versions. The replacement would require the use of increase graphics, flash based interactive simulations, and video based lectures and demonstrations. The addition of "check-your-understanding" formative quizzes in each lesson would allow students to verify learning after completing lesson activities.

Safety, Health, and Environment

Recommendations were made to replace the currently used Center for the Advancement of Process Technology web modules. These modules are out of date and use outdated software that does not function properly on later web browser versions. The replacement would require the use of increase graphics, flash based interactive simulations, and video based lectures and demonstrations. The addition of "check-your-understanding" formative quizzes in each lesson would allow students to verify learning after completing lesson activities. Utilize existing tutorials on Federal OSHA and other government websites to replace or augment specific reading activities associated agency rules and regulations.

Quality

This course was developed late 2009 and was not reviewed during this cycle. This course could benefit by the use of increase graphics, flash based interactive simulations, and video based lectures and demonstrations. The addition of "check-your-understanding" formative quizzes in each lesson would allow students to verify learning after completing lesson activities.

Process Technology I: Equipment

This course would benefit by the implementation of a hands-on lab phase that would allow students to handle and operate the equipment discussed during the course. Most refineries have developed a lab or practice equipment mockups that allow students to run, test, monitor, and shutdown equipment in a controlled learning environment. Partnership with area businesses to develop a facility that could be used by the program is the most likely scenario for success. This course could benefit by the use of increased graphics, flash based interactive simulations, and video based lectures and demonstrations. Video based lectures that show equipment being checked or operated are an option to lab activities. The addition of "check-your-understanding" formative quizzes in each lesson would allow students to verify learning after completing lesson activities.

Process Technology II: Systems

This course would benefit by the implementation of a hands-on simulation lab that would allow students to explore the operation of process systems such as boilers, furnaces, pumping systems, and distillation facilities. Most refineries have generic simulations that allow students to run, test, monitor, and shutdown equipment in a simulated learning environment. Partnership with area businesses to develop a facility that could be used by the program is the most likely scenario for success. This course could benefit by the use of increased graphics, flash based interactive simulations, and video based lectures and demonstrations. Video based lectures that show equipment being checked or operated are an option to lab activities. The addition of "check-your-understanding" formative quizzes in each lesson would allow students to verify learning after completing lesson activities.

Process Technology III: Operations

This course would benefit by the implementation internship programs that allow students to experience first-hand the operation of process units. Most refineries have internship programs for engineers and technical personnel that can be expanded to included Process Technology students. Partnership with area businesses to supply internships is the most likely scenario for success. This course could benefit by the use of increased graphics, flash based interactive simulations, and video based lectures and demonstrations. Video based lectures that show equipment being checked or operated are an option to lab activities. The addition of "check-your-understanding" formative quizzes in each lesson would allow students to verify learning after completing lesson activities.

Instrumentation I & II

These courses would benefit by the implementation of a hands-on simulation/instrumentation lab that would allow students to explore the operation of instrumentation equipment and systems such as sensors, transmitters, relays, switches, and shutdown systems. Most refineries have a test system that allows students to study and test instrumentation equipment in a simulated learning environment. Partnership with area businesses to develop a facility that could be used by the program is the most likely scenario for success. This course could benefit by the use of increased graphics, flash based interactive simulations, and video based lectures and demonstrations. Video based lectures that show equipment being checked or operated are an option to lab activities. The addition of "check-your-understanding" formative quizzes in each lesson would allow students to verify learning after completing lesson activities.

Program Need

The purpose of the Process Technology Program is to prepare a technical workforce with the knowledge and skills needed by major energy, chemical, and oil and gas producers. The Los Angeles/Orange County metropolitan area has six major oil refineries, twelve public power agencies, four water districts, and dozens of chemical companies that employ process operators. The knowledge and skills attained through the Process Technology Program at Coastline are designed to prepare students for employment with these types of companies.

The Bureau of Labor Statistics Occupational Outlook Handbook for 2010-11 predicts the following for Power Plant Operators, Distributors, and Dispatchers (http://www.bls.gov/oco/ocos227.htm).

- Overall employment is projected to experience little or no change over the next decade, but job prospects are expected to be excellent for qualified applicants as many workers retire.
- Several years of classroom and on-the-job training are required to become fully qualified.
- Familiarity with computers and a basic understanding of science and math are helpful for those entering the field.

The Bureau of Labor Statistics Occupational Outlook Handbook for 2010-11 predicts the following for Water and Liquid Waste Treatment Plant and System Operators (http://www.bls.gov/oco/ocos229.htm).

- Employment is concentrated in local government and water, sewage, and other systems utilities.
- Because of expected much faster than average employment growth and a large number of upcoming retirements, job opportunities will be excellent.
- Completion of an associate degree or a 1-year certificate program in environmental studies or a related field may help applicants to find jobs and advance more quickly.

Petroleum process plant operators, chemical plant operators, and gas plant operators were last evaluated in 2008 and were predicted to show less growth in employment opportunities. However, recent trends may be reversing based on increased worker retirement. All of the above analyses by the Bureau indicate that classroom and job-specific training are a big plus in getting hired into one of these positions. The Chevron El Segundo Refinery has hired four people from the Coastline PTEC Program in 2011. The Coastline Process Technology program needs to be more aggressively marketed to industrial companies in the area to ensure the existing curriculum meets their needs and students are given due consideration based on their knowledge, skills, and effort to learn industry knowledge and skills.

Program Resource Requirements

The Process Technology Program curriculum at Coastline is conducted entirely online by three part-time faculty members. The Seaport course management system is used to host the courses with six courses being offered each semester. Process Technology II: Systems and Process Technology III: Operation courses are conducted on alternating semesters. Introduction I and Introduction II are conducted on alternating semesters. Introduction to Process Technology and Work-Experience (Internships) courses are offered during the summer eight week semester as needed.

Curriculum development and improvement are managed by the part-time faculty and Coast Learning Systems. Industry partners have funded Coast Learning Systems expenses in support of the program. Industry partners have funded significant portions of programs and developed lab and simulation facilities for other programs throughout the nation. There is potential for this type of funding from area process industry businesses at Coastline.

Program Partnerships

The Process Technology Program does not have an active professional advisory committee. The program was founded in 2008 and conducted an initial advisory committee with participants from Chevron, ConocoPhillips, and Exxon Mobil. Chevron has been the primary participant in the program supplying funding, subject matter experts, and students. In 2009, Chevron sponsored five student interns from the program. All three faculty members are employed by Chevron. ConocoPhillips continues to supply existing employees to the program, as students. Exxon Mobil has met with students to explain their hiring program and has agreed to consider students when they resume hiring.

For this program to remain successful, additional partnerships with area refiners, power producers, chemical companies, and utilities need to fostered and strengthened. A representative from Coastline must develop these relationships and persuade area industry that our students are worthy of extra

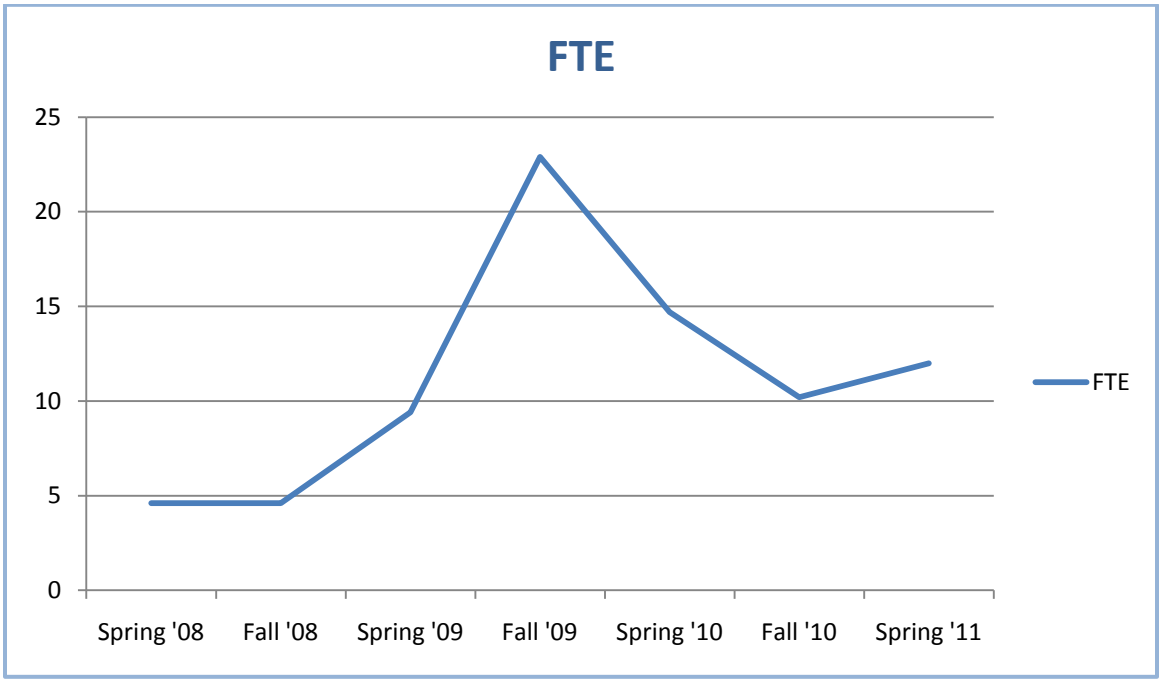
consideration based on what they learn from this program. The establishment of an active professional advisory committee that includes members from the business community, area labor unions, and education will open employment opportunities to our students and benefit the business involved.

Quantitative Elements

Course Data

The Process Technology Program offers six course in fall, six courses in spring, and two courses in Summer. The following chart summarizes student full-time equivalents (FTEs) by course since the program's inception in Spring 2008. Significant drop off in 2010 semesters could be attributed to lack of program support by the college and industry caused by lack of program promotion to students and industry business.

Process Technology Course Enrollment Data - Spring 2008 to Spring 2011



Student Elements

The Process Technology Program student success rate indicates that the program is comparable to statewide success rates. The small student populations in some semesters and the shortened summer course schedules have led to some volatility in student success and retention rates. Additional efforts need to be made to get students up to speed quickly during the semester to improve success.

Other Engineering and Related Industrial Technologies (0999)					
	Coastline				
	Success			Retention	
	Total Enrollments	Succeeded	Success Rate	Retained	Retention Rate
Spring 2010	170	111	65.29%	140	82.35%
Fall 2009	209	156	74.64%	171	81.82%
Summer 2009	47	23	48.94%	27	57.45%
Spring 2009	91	68	74.73%	69	75.82%
Fall 2008	45	17	37.78%	42	93.33%
Spring 2008	34	14	41.18%	33	97.06%

Other Engineering and Related Industrial Technologies (0999)					
	Statewide				
	Success			Retention	
	Total Enrollments	Succeeded	Success Rate	Retained	Retention Rate
Spring 2010	1,466	1,101	75.10%	1,334	91.00%
Fall 2009	1,432	1,090	76.12%	1,243	86.80%
Summer 2009	365	312	85.48%	334	91.51%
Spring 2009	1,398	1,092	78.11%	1,234	88.27%
Fall 2008	1,267	1,023	80.74%	1,133	89.42%
Spring 2008	1,120	910	81.25%	1,003	89.55%

Cost Data

The Process Technology Program has three part-time faculty members.

Program Outcomes

Student Learning Objectives

The Process Technology Program is a new program with the initial course being offered Spring 2008. The subsequent courses were developed over the next year and student learning objectives for each course were identified by 2009. Instructors have just begun evaluating student learning objects with development of recommended improvements scheduled for 2011. The program was evaluated and improvement recommendations were made in the Fall of 2010. The detailed results of the evaluation and recommendations are in the appendices.

Student Satisfaction

Student Surveys were conducted at the conclusion of each semester from Spring 2008 to Spring 2010. The most questions and student response averages from Spring 2010 are in the following table. The student response averages for the remaining semesters can be found in the Appendices. Responses are based on a scale of 1 – 5, where 1 is Poor and 5 is Excellent

Question	110	111	112	113	114	115	116	117	Total
Please rate the overall difficulty of this course and its contents?	3.5	3.25	3.3	3.3	3.6	3.0	3.1	n/a	**3.29**
How interesting and enjoyable was this course?	4.0	4.0	4.0	4.0	3.7	3.9	3.5	n/a	**3.87**
How well did this course meet your expectations for learning? Did you learn what you wanted or needed to learn?	3.88	4.25	3.9	4.0	3.4	3.3	3.7	n/a	**3.78**

Question	110	111	112	113	114	115	116	117	Total
How clear and understandable were directions for the course assignments, quizzes, exams, etc.?	3.88	4.5	4.2	4.5	3.4	4.2	3.8	n/a	**4.07**
How would you rate the quality of the required materials and learning resources for this course (textbook, web site, student guide, supplementary readings, videos, etc.)?	3.44	3.75	4.3	4.2	3.4	4.2	3.7	n/a	**3.86**
How would you rate the effectiveness of your instructor in teaching this course?	3.38	4.5	4.4	4.3	3.6	4.3	3.8	n/a	**4.04**
How would you rate the use of instructional technology in this course (email, PowerPoint, discussion forums, CD-ROMs, Internet/Web resources, videos)?	2.86	3.5	3.7	3.9	3.3	3.6	4.1	n/a	**3.57**

Question	110	111	112	113	114	115	116	117	Total
How promptly have you received feedback and grades on your course assignments, quizzes, and exams?	3.25	4.0	4.3	4.2	2.9	4.1	3.4	n/a	**3.74**
Would you have liked less or more interaction with your instructor during this course?	3.5	3.25	3.4	3.2	3.6	4.1	3.8	n/a	**3.55**
Would you have liked less or more interaction with your fellow students during this course?	2.75	2.75	3.2	2.8	2.8	3.8	3.3	n/a	**3.06**
How would you rate your overall satisfaction with this course?	4.25	4.25	4.3	4.5	3.6	4.9	4.5	n/a	**4.33**

Conclusions

The Process Technology program curriculum is nationally accepted by the energy industry for teaching students the knowledge and skills they need to be successful in the process industry. The Coastline version has been successfully adapted to a distance learning format that allows it to be used for students that are currently employed in the industry as well as for entry level students.

Economic conditions in the state had reduced the attrition rate of existing employees to the point that area companies have not hired process technicians for several years have shown signs of reversal. Four students from the Coastline PTEC Program were hired this year by the Chevron El Segundo Refinery. Many companies most likely plan to hire significant numbers of employees in the process technology field over the next several years as attrition due to retirement has returned to pre-recession levels.

Program Strengths

Curriculum

The process technology curriculum developed by Coastline is based on student learning objectives developed by the Center for the Advancement of Process Technology in concert with the National Science Foundation and the Department of Labor. Coastline has developed the curriculum into a distance learning format working with industry subject matter experts and Instruction System Design expertise from Coast Learning Systems. The curriculum has been reviewed and updated after each semester with an extensive review just completed this year. Improvements are planned to update the software platform for various computer based learning modules to include interactive simulation, videos, and increased use of graphics.

Faculty

The lead instructor and head curriculum developer for the program has a Masters Degree in Process Technology from California State University at Fullerton. He has twenty years experience as a Process Technician trainer and is the Learning Systems Supervisor for a major area refiner. All three instructors have over 60 combined years of process technology experience with extensive experience as trainers in the industry.

Distance Learning

The distance learning format allows students with full time employment, industry employees, and from a wide demographic background to participate in the program. The program could be easily expanded to include military personnel who are often preferred employees by process companies. The program is designed to allow experienced process technicians to learn from the program will participating with students from outside the industry. This has the added benefit for students outside the industry to learn from experienced technicians, ask questions about the industry, and give experienced students the opportunity to share their knowledge with others.

Low Cost

The distance learning format requires no classroom facilities and reduces other expenses associated with classroom based learning. All information, except textbooks, is available online. Students do not have to travel to and from school and can learn the information asynchronously.

Opportunities

Area Business Participation

Participation in the program by hiring students, hosting internship programs, and participating in the Program Advisory Committee is limited to three companies. As mentioned earlier, the Los Angeles/Orange County metropolitan area has six major oil refineries, twelve public power agencies,

four water districts, and dozens of chemical companies that employ process operators. The program must reach out to these other companies and demonstrate the benefit of participation in the Coastline program.

Lab and Simulation Program

The development of lab and simulation facilities and associated curriculum would be a benefit to the program. Many Process Technology programs have partnered with area businesses to create facilities for students at little or no cost to the programs. The program must reach out to these area businesses and develop facilities or use facilities owned by these businesses to help students gain hands on experience.

Internship

Participation in the program by providing student internships would allow our students to gain first hand experience in a process unit and learn by doing. The program placed five interns in the summer of 2009 but additional placements have not been made due to budget cuts. The program must renew it's effort to place interns with companies to help students gain experience and evaluate students as future employees.

Recommendations

Advisory Committee

Establish an advisory committee that consists of area businesses, labor unions, faculty, and Coastline leadership. Members might include the six major oil refineries, twelve public power agencies, four water districts, and area chemical companies. Solicit Labor Union participation in the program and encourage them to negotiate agreements with represented companies for students to perform work in the various plants.

Apprenticeship Certification

Work with the State of California, Department of Industrial Regulation, Division of Apprenticeship Standards to certify the curriculum in this program. Certification will open up opportunities for students in the area of Boiler Operator, Petroleum Gauging and Distribution operators, Wastewater Treatment Operators, and Water Treatment operators. The certification of this curriculum by this department will increase employment opportunities for our students.

Marketing

Aggressively market the program to both students and area businesses. Most students enroll in this program because they want to change careers and attain long term employment stability with a high paying job. Based on Bureau of Labor statistics and forecasts jobs in this industry will be on the rise over the next few years. Students will be interested in the program.

Businesses will be interested in the program because training students without knowledge, skills or experience is expensive. Industry training programs tend to deteriorate when they are not hiring because they are not training people. With an influx of employees over the next several years, businesses will need to update their training programs or select a program that meets their training needs. A nationally accepted curriculum that can be delivered to a business's employees at low cost is an attractive solution compared to developing or revitalizing it's own training solution.

Five Year Goals

Curriculum Upgrades

Replace outdated CBT modules with modern modules that function on all web-based platforms.
Include renewable energy and greenhouse gas reduction instruction where appropriate.
Produce and include simulation, video, and high-quality graphics in the curriculum.

Apprenticeship Certification

Work with the State of California, Department of Industrial Regulation, Division of Apprenticeship Standards to certify the curriculum in this program for various trades including Boiler Operator, Petroleum Gauging and Distribution operators, Wastewater Treatment Operators, and Water Treatment operators.

Advisory Committee

Solicit membership the six major oil refineries, twelve public power agencies, four water districts, area chemical companies; and Labor Union participation on the advisory committee.

Student Learning Objectives

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.

Develop New Course on Renewable Energy and Greenhouse Gas Reduction

Work with industry experts to identify learning objectives for a new course that will prepare students and businesses to respond to new conditions in the energy industry. Develop objectives into a course and curriculum that can be used to meet knowledge and skill requirements for this industry.

Appendices

A. Minutes of Initial Process Technology Advisory Board meeting.
B. PTEC Detailed Course Objectives
C. Student Survey Results

D. Faculty Survey Results
E. Coast Learning Systems Program Recommendations

Process Technology Program Review Appendix A Initial PTEC Advisory Board Meeting Minutes - 2008

Appendix A: Minutes of Initial Process Technology Advisory Board Meeting.

<Insert minutes here>

Process Technology
Program Review
Appendix B
Detailed Course Objectives

2011

Review Team
Ronald Smith, Lead Faculty

Appendix B: PTEC Detailed Course Objectives

Course Outline of Record

Coastline Community College

_____ Original _9/5/07_ Date

___X____ Revision _7/23/09__ Date

1. DISCIPLINE(S): Mining and Metallurgy, Industrial Technology, Environmental Technologies,
   Electromechanical Technology.

2. COURSE ID NUMBER: PTEC C110

3. COURSE TITLE: Introduction to Process Technology

4. ABBREVIATED TITLE: Intro Process Tech

5. COURSE UNITS: 3.0

6. TOTAL SEMESTER HOURS: __54___Lecture _____Non-Lecture

7. GRADING METHOD: (Check only one)
   __X__ Student Option ____ Letter Grade ____ Pass/No Pass ____ Non-Credit

8. PREREQUISITE: None

9. CO-REQUISITE: None

10. ADVISORY: None

11. MATERIAL FEE: None
(Attach a Material Fee Justification Form)

12. CATALOG DESCRIPTION: Intro to Process Technology provides an overview of various process industries (oil and gas, chemical, mining, power generation, pulp and paper, water and waste water treatment, food and beverage, and pharmaceutical), basic chemistry, basic physics, safety, health, environment and security, quality, teams, process drawings, and process equipment.

13. SCHEDULE DESCRIPTION: *Same as above.*

14. STUDENT LEARNING OUTCOMES:

1. Given a process control scenario, the student will be able to design a process flow chart diagramming the movement through the major components used in the distillation of petro-chemical products.
2. Describe the chemical processes used in petro-chemical refinement.

15. COURSE CONTENT: (Instructional topics or units. Use outline format.)

I. History of the Process Industries
II. History of the Process Industries
III. Basic Physics
IV. Basic Chemistry
V. Safety, Health, and the Environment
VI. Principles of Quality
VII. Piping and Valves
VIII. Tanks, Drums, and Vessels
IX. Pumps
X. Compressors
XI. Steam Turbines
XII. Electricity and Motors
XIII. Heat Exchangers
XIV. Furnaces
XV. Boilers

XVI. Distillation
XVII. Process Control Instrumentation
XVIII. Process Utilities
XIX. Process Auxiliaries
XX. Process Print Reading

16. REPEATABILITY: N/A

17. CLASSROOM INSTRUCTION: Instructor-initiated learning strategies and activities. A paragraph **must** be written by the instructor for classroom instruction **for all** courses.

Students will gain knowledge of process control through a series of lectures, discussions, scenario based practices, configuration based practices and simulated tours.

18. STUDENT ACTIVITIES: Activities and homework that will be completed by the student.

Short-essay responses to investigative field scenarios.
Identification and organization of research material from a library.
Analyze and narrate case studies.

19. ASSESSMENT METHODS: (Measurements of learning outcomes. *If rubrics have been developed for scoring the robust course-level SLOs, please attach.)*

Assessment Method	**Describe the style and content of each assessment method to be used in measuring SLOs.**
Quizzes	13 true/false and multiple choice tests
Written Assignments	14 design flow assignments
Midterm Examination	True/false and multiple choice test with demonstration of design-flow strategies and processes
Essay Examination	

Assessment Method	**Describe the style and content of each assessment method to be used in measuring SLOs.**
Objective Examination	
Reports	
Projects	Design of process control components
Mathematical and Problem-Solving Exercises	13 Mathematical computations to determine stress, flow, and vapor distillation
Non-Mathematical Problem-Solving Exercises	13 scenario design based problem-solving exercises
Skills Demonstration	
Final Examination	True/False and multiple choice test with demonstration of design-flow strategies and processes
Other	

20. RECOMMENDED BOOK(S): ***This section must have the textbook(s): Year and ISBN***

Introduction to Process Technology

January 2006 ISBN: 0-536-17501-2

21. SUPPLEMENTAL READING: Coastline College's Virtual Library: http://coastline.edu/library

22. OTHER REQUIRED SUPPLIES AND MATERIALS: None

23. *(Please see department chair or discipline office for the following information)*
Baseline Enrollment: ___45____

CIP CODE: _____ Division # __303____ Department # __PTEC____

24. Coastline Community College is dedicated to assuring that all students who earn an A.A. degree will have mastered the Eight Core Degree-Level Outcomes. Listed below

Does this course contribute to any of these eight? Please check any that apply.

	Demonstrate understanding and appreciation for the visual and performing arts
X	Demonstrate ethical civic, environmental, and social responsibility
	Demonstrate ability to apply critical thinking and analysis
X	Demonstrate innovative thinking, adaptability, and creative problem-solving skills
	Demonstrate understanding and respect for cultural and global diversity
	Demonstrate information competency
	Use effective communication and interpersonal skills
	Use scientific and quantitative reasoning

Type the following appropriate names:

Originating Faculty: ___Ron Smith

Department Chair: ___N/A

Discipline Dean: _____Dr. Joumana Mcgowan

Distance Learning Dean: ___Vince Rodriguez

Curriculum Committee Meeting: September 18, 2009 Revised Approved _X__ Disapproved ___ Tabled:___

CAN:

CSU-GE:

IGETC:

COURSE OUTLINE

COASTLINE COMMUNITY COLLEGE

___X___ New 10-18-07
Date

_____ Revision _____ Date

25. DISCIPLINE: PTEC

26. COURSE ID NUMBER: PTEC 111

27. COURSE TITLE: Health, Safety, and Environment

28. ABBREVIATED TITLE (23 Characters Max): Health, Safety, Environment

29. COURSE UNITS: 3.0

30. TOTAL SEMESTER HOURS: ___54____Lecture _____Non-Lecture

31. GRADING METHOD: (Check one)
Letter Grade ____ Graded or Credit Option __X__ Credit/No Credit ____Non-Credit____

32. PREREQUISITE: None

33. CO-REQUISITE: None

34. ADVISORY: PTEC 110

35. MATERIAL FEE: None

36. CATALOG DESCRIPTION:

The purpose of this course is to provide an introduction into the field of Safety, Health, & Environment within the process industry. Within this course, students will be introduced to various types of plant hazards, safety and environmental systems, equipment, and regulations under which plants are governed.

37. SCHEDULE DESCRIPTION:

This course will introduce various types of plant hazards, safety and environmental systems, equipment, and regulations.

38. STUDENT LEARNING OUTCOMES: (Course-level outcomes are required; lesson/unit-level outcomes are optional.)

1. List, describe, and analyze responses associated with industrial accidents that have impacted safety, health, and the environment.
2. Design a safety, health, and environmental accident response plan.

3. Collect safe work practices used in industry.

39. COURSE CONTENT: (Instructional topics or units. Use outline format.)

1. HAZARDS AND THEIR EFFECTS
    A. Chemical

    B. Biological
    C. Equipment and Energy
    D. Fire/Explosion
    E. Pressure, Temperature, Radiation
    F. Respiratory
    G. Work Place Environment
    H. Vehicle Transportation
2. NATURAL DISASTERS
3. SECURITY/CYBER SECURITY
4. ERGONOMIC SITUATIONS
5. ENVIRONMENT HAZARDS
    A. Chemicals
    B. EPA Regulations
6. HAZARD CONTROL
    A. Engineering
    B. Administrative
    C. PPE
7. ENGINEERING CONTROLS
    A. Alarms
    B. Process Containment
8. PERMITTING SYSTEMS
9. PERSONAL PROTECTIVE EQUIPMENT/FIRST AID
10. MONITORING EQUIPMENT
11. EMERGENCY RESPONSE

40. MULTIPLE METHODS AND DELIVERY OF INSTRUCTION: Instructor-initiated learning strategies. A paragraph **must** be written by the instructor for classroom instruction **for all** courses.

This course provides course content in person and on screen in written form. The syllabus, assignments, linked pages, and other content will be delivered through the course Web page. Discussion forums, chat rooms, and private e-mail will be used to enhance the delivery of the course and to provide interaction between students and between students and the instructor.

41. ASSESSMENT METHODS: (Measurements of learning outcomes. *If rubrics have been developed for scoring the robust course-level SLOs, please attach.)*

Assessment Method	**Describe the style and content of each assessment method to be used in measuring SLOs.**
Quizzes	12 Quizzes made up of true/false, multiple choice or fill in
Written Assignments	Situational Procedures based on a scenario.
Midterm Examination	1 Midterm made up of true/false, multiple choice or fill in as well as a scenario based problem.
Essay Examination	
Objective Examination	
Reports	
Projects	Safety, Health and Environmental Accident Report Plan
Mathematical and Problem-Solving Exercises	Calculations of temperature, exposure rates and impact calculations.
Non-Mathematical Problem-Solving Exercises	4 Scenario based problem solving assignments.
Skills Demonstration	
Final Examination	1 Final made up of true/false, multiple choice or fill in as well as a scenario based problem
Other	

18. RECOMMENDED TEXTBOOK(S):

Safety Health and Environment

ISBN: 0-536-25843-0 August 2006

19. SUPPLEMENTAL READING:

Coastline College's Virtual Library: http://library.coastline.edu

None

20. OTHER REQUIRED SUPPLIES AND MATERIALS:

None

Type the following appropriate names:

Prepared by: Nancy S. (Chamberlain) Jones

Department Chair: Nancy S. (Chamberlain) Jones

Discipline Dean: Joumana McGowan

Distance Learning Dean: Vince Rodriguez

Date of Curriculum Committee Meeting: November 16, 2007 - New

Approved _____ Disapproved _____ Tabled:_____

FOR OFFICE USE ONLY

TOPS Code:

_____

CAN:

CSU-GE:

IGETC:

COURSE OUTLINE

COASTLINE COMMUNITY COLLEGE

___X____ New 10-18-07
Date

_____ Revision _____ Date

1. DISCIPLINE: PTEC

2. COURSE ID NUMBER: PTEC 112

3. COURSE TITLE: Quality Management

4. ABBREVIATED TITLE (23 Characters Max): Quality Management

5. COURSE UNITS: 1.5 Units

6. TOTAL SEMESTER HOURS: ___27____ Lecture _____Non-Lecture

7. GRADING METHOD: (Check one)
Letter Grade ____ Graded or Credit Option __X__ Credit/No Credit ____Non-Credit____

8. PREREQUISITE: None

9. CO-REQUISITE: None

10. ADVISORY: None

11. MATERIAL FEE: None

12. CATALOG DESCRIPTION:

The purpose of this course is to provide an introduction to the field of Quality within the process industry. Within this course students will be introduced to many process industry-related quality concepts, including operating consistency, continuous improvement, plant economics, team skills, and statistical process control (SPC).

13. SCHEDULE DESCRIPTION:

This course will introduce many process industry-related quality concepts, including operating consistency, continuous improvement, plant economics, team skills, and statistical process control (SPC).

14. STUDENT LEARNING OUTCOMES: (Course-level outcomes are required; lesson/unit-level outcomes are optional.) Students will be able to:

1. Given a customer service scenario, evaluate the situation and chose an appropriate positive customer service solution.

2. Evaluate quality programs significant to the process industry today: ISO 9000 and Sigma Six.

15. COURSE CONTENT: (Instructional topics or units. Use outline format.)

1. TOTAL QUALITY MANAGEMENT (TQM)
2. CUSTOMER SERVICE AND PERSONAL EFFECTIVENESS
    A. Definition
    B. Win/Win Relationships
3. EFFECTIVE COMMUNICATION AND TEAM SKILLS
    A. Verbal
    B. Written
4. PROCESS SYSTEMS AND ORGANIZATIONAL BEHAVIOR
    A. Process Orientation
    B. Process Management
5. VARIANCE AND OPERATING CONSISTENCY
    A. Common/Special Causes
    B. Standardizations /DO/Check/ACT Process (SDCA)
6. CONTINUOUS IMPROVEMENT AND CORRECTIONS PREVENTIVE ACTION
7. STATISTICAL THINKING/DATA COLLECTION
    A. Statistical Process Control System (SPC)
    B. Technical Data

16. MULTIPLE METHODS AND DELIVERY OF INSTRUCTION: Instructor-initiated learning strategies. A paragraph **must** be written by the instructor for classroom instruction **for all** courses.

This course provides course content in person and on screen in written form. The syllabus, assignments, linked pages, and other content will be delivered through the course Web page. Discussion forums, chat rooms, and private e-mail will be used to enhance the delivery of the course and to provide interaction between students and between students and the instructor.

17. ASSESSMENT METHODS: (Measurements of learning outcomes. *If rubrics have been developed for scoring the robust course-level SLOs, please attach.)*

Assessment Method	**Describe the style and content of each assessment method to be used in measuring SLOs.**
Quizzes	5 Quizzes made up of true/false, multiple choice or

Assessment Method	**Describe the style and content of each assessment method to be used in measuring SLOs.**
	fill in
Written Assignments	Situational Procedures based on a scenario.
Midterm Examination	1 Midterm made up of true/false, multiple choice or fill in as well as a scenario based problem.
Essay Examination	
Objective Examination	
Reports	
Projects	
Mathematical and Problem-Solving Exercises	Computational Equations including Standard Deviations, mean, median, mode, and distribution analysis..
Non-Mathematical Problem-Solving Exercises	4 Scenario based problem solving assignments.
Skills Demonstration	
Final Examination	1 Final made up of true/false, multiple choice or fill in as well as a scenario based problem
Other	

18. RECOMMENDED TEXTBOOK(S):

Quality Student Workbook: a Product of the Center for the Advancement of Process Technology.

ISBN: N/A 2000

19. SUPPLEMENTAL READING:

Coastline College's Virtual Library: http://library.coastline.edu

None

20. OTHER REQUIRED SUPPLIES AND MATERIALS:

None

Type the following appropriate names:

Prepared by: Nancy S. (Chamberlain) Jones

Department Chair: Nancy S. (Chamberlain) Jones

Discipline Dean: ___Joumana McGowan

Distance Learning Dean: __Vince Rodriguez

Date of Curriculum Committee Meeting: November 16, 2007 - New

Approved __X__ Disapproved _____ Tabled:_____

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TOPS Code: _0999.00_
CIP: _____

CAN:

CSU-GE:

IGETC:

COURSE OUTLINE

COASTLINE COMMUNITY COLLEGE

___X____ New 10-18-07
Date

_____ Revision _____ Date

1. DISCIPLINE: PTEC

2. COURSE ID NUMBER: PTEC 113

3. COURSE TITLE: Process Technology I: Equipment

4. ABBREVIATED TITLE (23 Characters Max): Process Technology I: Equipment

5. COURSE UNITS: 3.0 Units

6. TOTAL SEMESTER HOURS: ___54____ Lecture _____Non-Lecture

7. GRADING METHOD: (Check one)
Letter Grade ____ Graded or Credit Option __X__ Credit/No Credit ____Non-Credit____

8. PREREQUISITE: None

9. CO-REQUISITE: None

10. ADVISORY: PTEC 110

11. MATERIAL FEE: None

12. CATALOG DESCRIPTION:

The purpose of this course is to provide an introduction to the field of equipment within the process industry. Within this course, students will be introduced to many process industry-related equipment concepts including purpose, components, operation, and the process technician's role for operating and troubleshooting the equipment.

13. SCHEDULE DESCRIPTION:

This course provides an introduction into the field of equipment within the process industry, including industry-related equipment components, operation, and troubleshooting.

14. STUDENT LEARNING OUTCOMES:

1. Describe the function of process control equipment

2. Design a Flow Diagram Process outlining the path of resources through production and ending with the final products.

3. Assess equipment needs based on a given scenario.

15. COURSE CONTENT: (Instructional topics or units. Use outline format.)
    1. EQUIPMENT TOOLS
    2. PIPING, TUBING, HOSES, FITTINGS
        A. Selection and Sizing Criteria
        B. Troubleshooting
    3. VALVES AND PUMPS
        A. Maintenance
        B. Centrifugal pumps
        C. Positive Displacement
    4. COMPRESSORS

A. Operating Principles
B. Safety and Environmental Issues

5. MOTORS AND ENGINES
   A. Operating Principles
   B. Troubleshooting
6. TURBINES
7. POWER TRANSMISSIONS AND LUBRICATION
   A. Types of Lubricants
   B. Gear and Bearing Ratios
8. HEAT EXCHANGERS
   A. Applications
   B. Operating Principles
9. COOLING TOWERS
10. FURNACES
11. BOILERS
12. FILTERS AND DRYERS
13. VESSELS
    A. Operating Principles
    B. Components
    C. Types
14. PROCESS DIAGRAMS

16. MULTIPLE METHODS AND DELIVERY OF INSTRUCTION: Instructor-initiated learning strategies. A paragraph **must** be written by the instructor for classroom instruction **for all** courses.

This course provides course content in person and on screen in written form. The syllabus, assignments, linked pages, and other content will be delivered through the course Web page. Discussion forums, chat rooms, and private e-mail will be used to enhance the delivery of the course and to provide interaction between students and between students and the instructor.

17. ASSESSMENT METHODS: (Measurements of learning outcomes. *If rubrics have been developed for scoring the robust course-level SLOs, please attach.)*

Assessment Method	**Describe the style and content of each assessment method to be used in measuring SLOs.**
Quizzes	12 Quizzes made up of true/false, multiple choice or fill in
Written	Situational Procedures based on a scenario.

Assessment Method	**Describe the style and content of each assessment method to be used in measuring SLOs.**
Assignments	
Midterm Examination	1 Midterm made up of true/false, multiple choice or fill in as well as a scenario based problem.
Essay Examination	
Objective Examination	
Reports	
Projects	
Mathematical and Problem-Solving Exercises	Computational Equations to develop loads, flows, heat conversions, and piping calculations
Non-Mathematical Problem-Solving Exercises	4 Scenario based problem solving assignments.
Skills Demonstration	
Final Examination	1 Final made up of true/false, multiple choice or fill in as well as a scenario based problem
Other	

18. RECOMMENDED TEXTBOOK(S):

PROCESS TECHNOLOGY 1 Student Workbook: a Product of the Center for the Advancement of Process Technology.

ISBN: N/A 2000

19. SUPPLEMENTAL READING:

Coastline College's Virtual Library: http://library.coastline.edu

None

20. OTHER REQUIRED SUPPLIES AND MATERIALS:

None

Prepared by: Nancy S. (Chamberlain) Jones

Department Chair: Nancy S. (Chamberlain) Jones

Discipline Dean: Joumana McGowan

Distance Learning Dean: Vince Rodriguez

Date of Curriculum Committee Meeting: November 16, 2007 - New

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CAN:

CSU-GE:

IGETC:

COURSE OUTLINE

COASTLINE COMMUNITY COLLEGE

___X____ New 10-18-07
Date

_____ Revision _____ Date

1. DISCIPLINE: PTEC

2. COURSE ID NUMBER: PTEC114

3. COURSE TITLE: Process Technology II: Systems

4. ABBREVIATED TITLE (23 Characters Max): Process Technology II: Systems

5. COURSE UNITS: 3.0 Units

6. TOTAL SEMESTER HOURS: ___54____ Lecture _____Non-Lecture

7. GRADING METHOD: (Check one)
Letter Grade ____ Graded or Credit Option __X__ Credit/No Credit ____Non-Credit____

8. PREREQUISITE: None

9. CO-REQUISITE: None

10. ADVISORY: PTEC 113

11. MATERIAL FEE: None

12. CATALOG DESCRIPTION:

The purpose of this course is to study the interrelation of process equipment and process systems. Students will be able to arrange process equipment into basic systems, describe the purpose and function of specific process systems, explain how factors affecting process systems are controlled under normal conditions, and recognize abnormal process conditions.

13. SCHEDULE DESCRIPTION:

The purpose of this course is to study the interrelation of process equipment and process systems as they are used in normal conditions.

14. STUDENT LEARNING OUTCOMES: (Course-level outcomes are required; lesson/unit-level outcomes are optional.) Students will be able to:

1. Given a scenario, create a Systems Processing Flow Diagram and compare systems by function and category.

2. Based on the Systems Processing Flow Diagram, select the optimum systems that provide the most efficient processing under normal conditions.

15. COURSE CONTENT: (Instructional topics or units. Use outline format.)
    1. WATER SYSTEMS
    2. COOLING SYSTEMS
        A. Potable
        B. Waste
    3. AIR SYSTEMS
        A. Instrument
        B. Breathing
    4. GAS SYSTEMS
        A. Nitrogen

   B. Natural Gas
   C. Fuel
5. RELIEF SYSTEMS
   A. Flare
   B. Electrical
6. MATERIAL STORAGE
7. STEAM
   A. Generation
   B. Steam
8. REACTION
   A. Separation
   B. Extraction
9. DISTILLATION
10. STRIPPING
11. DEHYDRATION
12. FILTRATION
13. CONTROL
14. SYSTEM ECONOMICS AND OPTIMAZATION

16. MULTIPLE METHODS AND DELIVERY OF INSTRUCTION: Instructor-initiated learning strategies. A paragraph **must** be written by the instructor for classroom instruction **for all** courses.

This course provides course content in person and on screen in written form. The syllabus, assignments, linked pages, and other content will be delivered through the course Web page. Discussion forums, chat rooms, and private e-mail will be used to enhance the delivery of the course and to provide interaction between students and between students and the instructor.

17. ASSESSMENT METHODS: (Measurements of learning outcomes. *If rubrics have been developed for scoring the robust course-level SLOs, please attach.)*

Assessment Method	**Describe the style and content of each assessment method to be used in measuring SLOs.**
Quizzes	12 Quizzes made up of true/false, multiple choice or fill in
Written	Situational Procedures based on a scenario.

Assessment Method	**Describe the style and content of each assessment method to be used in measuring SLOs.**
Assignments	
Midterm Examination	1 Midterm made up of true/false, multiple choice or fill in as well as a scenario based problem.
Essay Examination	
Objective Examination	
Reports	
Projects	
Mathematical and Problem-Solving Exercises	Computational Equations including loads, temperature, pressure
Non-Mathematical Problem-Solving Exercises	10 Scenario based problem solving assignments.
Skills Demonstration	
Final Examination	1 Final made up of true/false, multiple choice or fill in as well as a scenario based problem
Other	

18. RECOMMENDED TEXTBOOK(S):

Process Control II: Systems Student Workbook: a Product of the Center for the Advancement of Process Technology

ISBN: N/A 2000

19. SUPPLEMENTAL READING:

Coastline College's Virtual Library: http://library.coastline.edu

None

20. OTHER REQUIRED SUPPLIES AND MATERIALS:

None

Prepared by: Nancy S. (Chamberlain) Jones

Department Chair: Nancy S. (Chamberlain) Jones

Discipline Dean: Joumana McGowan

Distance Learning Dean: Vince Rodriguez

Date of Curriculum Committee Meeting: November 16, 2007 - New

FOR OFFICE USE ONLY	
TOPS Code:	0999.00
CIP:	_____

CAN:

CSU-GE:

IGETC:

COURSE OUTLINE

COASTLINE COMMUNITY COLLEGE

___X____ New 10-18-07
Date

_____ Revision _____ Date

1. DISCIPLINE: PTEC

2. COURSE ID NUMBER: PTEC 115

3. COURSE TITLE: Process Technology III-Operations

4. ABBREVIATED TITLE (23 Characters Max): Process Technology III: Operations

5. COURSE UNITS: 3.0 Units

6. TOTAL SEMESTER HOURS: ___54____ Lecture _____Non-Lecture

7. GRADING METHOD: (Check one)
Letter Grade ____ Graded or Credit Option __X__ Credit/No Credit ____Non-Credit____

8. PREREQUISITE: None

9. CO-REQUISITE: None

10. ADVISORY: PTEC 114

11. MATERIAL FEE: None

12. CATALOG DESCRIPTION:

The purpose of this course is to provide an introduction to the field of operations within the process industry. Within this course, students will use existing knowledge of equipment, systems, and instrumentation to understand the operation of an entire unit. Students study concepts related to commission, normal startup, normal operations, normal shutdown, turnarounds, and abnormal situations as well as the process technician's role in performing the tasks associated with these concepts within an operating unit.

13. SCHEDULE DESCRIPTION:

This course covers concepts related to commission, normal startup, normal operations, normal shutdown, turnarounds, and abnormal situations within an operating unit.

14. STUDENT LEARNING OUTCOMES: (Course-level outcomes are required; lesson/unit-level outcomes are optional.) Students will be able to:

1. Compare monitoring requirements for the various equipment types within the TimTene Unit.

2. Given an emergency scenario, select and diagram the corrective action that needs to be taken.

15. COURSE CONTENT: (Instructional topics or units. Use outline format.)

1. STARTUP COMMISSIONING
2. NORMAL STARTUP
    A. Return to Service
    B. Removal of Energy Isolation Devices
    C. Utilities and Auxiliaries
    D. Process Unit
3. NORMAL OPERATIONS
    A. Field Technician
    B. Control Room Technician
    C. Housekeeping/Complying with SH & E Policies
    D. Communications
4. ABNORMAL OPERATIONS
    A. Emergency Operations and Situations
    B. Table Top Drill
    C. On –the-Job Training
5. NORMAL SHUTDOWN
    A. Communication
    B. Process Unit
6. EQUIPMENT MAINTENANCE
    A. Economic Impact
    B. SH & E Impact
7. DOCUMENTATION AND PERMITS
    A. Equipment Isolation
    B. Turnarounds

16. MULTIPLE METHODS AND DELIVERY OF INSTRUCTION: Instructor-initiated learning strategies. A paragraph **must** be written by the instructor for classroom instruction **for all** courses.

This course provides course content in person and on screen in written form. The syllabus, assignments, linked pages, and other content will be delivered through the course Web page. Discussion forums, chat rooms, and private e-mail will be used to enhance the delivery of the course and to provide interaction between students and between students and the instructor.

17. ASSESSMENT METHODS: (Measurements of learning outcomes. *If rubrics have been developed for scoring the robust course-level SLOs, please attach.)*

Assessment Method	**Describe the style and content of each assessment method to be used in measuring SLOs.**
Quizzes	12 Quizzes made up of true/false, multiple choice or fill in
Written Assignments	Situational Procedures based on a scenario.
Midterm Examination	1 Midterm made up of true/false, multiple choice or fill in as well as a scenario based problem.
Essay Examination	
Objective Examination	
Reports	
Projects	
Mathematical and Problem-Solving Exercises	
Non-Mathematical Problem-Solving Exercises	10 Scenario based problem solving assignments.
Skills Demonstration	
Final Examination	1 Final made up of true/false, multiple choice or fill in as well as a scenario based problem
Other	

18. RECOMMENDED TEXTBOOK(S):

Process Control III: Operations Student Workbook: a Product of the Center for the Advancement of Process Technology

ISBN: N/A 2000

19. SUPPLEMENTAL READING:

Coastline College's Virtual Library: http://library.coastline.edu

None

20. OTHER REQUIRED SUPPLIES AND MATERIALS:

None

Prepared by: Nancy S. (Chamberlain) Jones

Department Chair: Nancy S. (Chamberlain) Jones

Discipline Dean: Joumana McGowan

Distance Learning Dean: Vince Rodriguez

Date of Curriculum Committee Meeting: November 16, 2007 - New

Approved __X__ Disapproved _____ Tabled:_____

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CAN:

CSU-GE:

IGETC:

COURSE OUTLINE

COASTLINE COMMUNITY COLLEGE

___X____ New 10-18-07
Date

_____ Revision _____ Date

1. DISCIPLINE: PTEC

2. COURSE ID NUMBER: PTEC116

3. COURSE TITLE: Instrumentation I

4. ABBREVIATED TITLE (23 Characters Max): Instrumentation I

5. COURSE UNITS: 3.0 Units

6. TOTAL SEMESTER HOURS: ___54____ Lecture _____Non-Lecture

7. GRADING METHOD: (Check one)
Letter Grade ____ Graded or Credit Option __X__ Credit/No Credit ____Non-Credit____

8. PREREQUISITE: None

9. CO-REQUISITE: None

10. ADVISORY: PTEC 115

11. MATERIAL FEE: None

12. CATALOG DESCRIPTION:

The purpose of this course is to study the interrelation of instrumentation used in the petrochemical and refining industries. Students will be able to identify instrumentation loops and explain how industrial processes are controlled by instruments and loops.

13. SCHEDULE DESCRIPTION:

The purpose of this course is to study the interrelation of instrumentation used in the petrochemical and refining industries. Students will be able to identify instrumentation loops and explain how industrial processes are controlled by instruments and loops.

14. STUDENT LEARNING OUTCOMES: (Course-level outcomes are required; lesson/unit-level outcomes are optional.)

1. Given a scenario, select the appropriate temperature-sensing/measuring device based on function and result.

2. Given a process control scheme, assess the control loop functions.

15. COURSE CONTENT: (Instructional topics or units. Use outline format.)
    1. PROCESS VARIABLE, ELEMENTS AND INSTRUMENTATION
        A. Pressure
        B. Temperature
        C. Level
        D. Flow
        E. Analytical
    2. CONTROL LOOPS
        A. Primary Sensors
        B. Controllers
        C. Transmitters

3. CONTROL VALVES
4. SYMBOLOGY
5. INSTRUMENTATION SKETCHING

16. MULTIPLE METHODS AND DELIVERY OF INSTRUCTION: Instructor-initiated learning strategies. A paragraph **must** be written by the instructor for classroom instruction **for all** courses.

This course provides course content in person and on screen in written form. The syllabus, assignments, linked pages, and other content will be delivered through the course Web page. Discussion forums, chat rooms, and private e-mail will be used to enhance the delivery of the course and to provide interaction between students and between students and the instructor.

17. ASSESSMENT METHODS: (Measurements of learning outcomes. *If rubrics have been developed for scoring the robust course-level SLOs, please attach.)*

Assessment Method	**Describe the style and content of each assessment method to be used in measuring SLOs.**
Quizzes	12 Quizzes made up of true/false, multiple choice or fill in
Written Assignments	Situational Procedures based on a scenario.
Midterm Examination	1 Midterm made up of true/false, multiple choice or fill in as well as a scenario based problem.
Essay Examination	
Objective Examination	
Reports	
Projects	

Assessment Method	**Describe the style and content of each assessment method to be used in measuring SLOs.**
Mathematical and Problem-Solving Exercises	Conversion formulas and pressure computations
Non-Mathematical Problem-Solving Exercises	10 Scenario based problem solving assignments.
Skills Demonstration	
Final Examination	1 Final made up of true/false, multiple choice or fill in as well as a scenario based problem
Other	

18. RECOMMENDED TEXTBOOK(S):

Instrumentation
ISBN #: 0-536-85949-3

ISSUE January 2005

19. SUPPLEMENTAL READING:

Coastline College's Virtual Library: http://library.coastline.edu

None

20. OTHER REQUIRED SUPPLIES AND MATERIALS:

None

Prepared by: _Nancy S. (Chamberlain) Jones

Department Chair: __Nancy S. (Chamberlain) Jones

Discipline Dean: ___Joumana McGowan

Distance Learning Dean: __Vince Rodriguez

Date of Curriculum Committee Meeting: November 16, 2007

Approved __X__ Disapproved _____ Tabled:_____

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CIP:	_____

CAN:

CSU-GE:

IGETC:

COURSE OUTLINE

COASTLINE COMMUNITY COLLEGE

___X____ New 10-18-07
Date

_____ Revision _____ Date

1. DISCIPLINE: PTEC

2. COURSE ID NUMBER: PTEC 117

3. COURSE TITLE: Instrumentation II

4. ABBREVIATED TITLE (23 Characters Max): Instrumentation II

5. COURSE UNITS: 3.0 Units

6. TOTAL SEMESTER HOURS: ___54____ Lecture _____Non-Lecture

7. GRADING METHOD: (Check one)
Letter Grade ____ Graded or Credit Option __X__ Credit/No Credit ____Non-Credit____

8. PREREQUISITE: None

9. CO-REQUISITE: None

10. ADVISORY: PTEC 116

11. MATERIAL FEE: $3.00
(Attach a Material Fee Justification Form)

12. CATALOG DESCRIPTION:

The purpose of this course is to study the advanced instrumentation used in the petrochemical and refining industries. Students will be able to select instrumentation loops and describe industrial processes controls.

13. SCHEDULE DESCRIPTION:

The purpose of this course is to study the advanced instrumentation used in the petrochemical and refining industries. Students will be able to select instrumentation loops and describe industrial processes controls.

14. STUDENT LEARNING OUTCOMES: (Course-level outcomes are required; lesson/unit-level outcomes are optional.)

1. Evaluate monitoring control output signals and recommend adjustments to the process based on that output.

2. Given a basic description of a process and a P&ID of its ESD Systems, select appropriate emergency shutdown devices.

15. COURSE CONTENT: (Instructional topics or units. Use outline format.)
1. REGULATORS, SWITCHES, RELAYS AND ENUNCIATOR SYSTEMS
2. SIGNAL TRANSMISSION AND CONVERSION
   A. Controllers
   B. Control Schemes

Digital Control

   C. Programmable Logic Control
   D. Distributed Control Systems

E. Instrumentation Power Supply
F. Emergency

3. DIGITAL CONTROL
4. PROGRAMMABLE LOGIC CONTROL
5. DISTRIBUTED CONTROL SYSTEMS
6. INSTRUMENTATION POWER SUPPLY
7. INSTRUMENTATION MALFUNCTIONS
8. EMERGENCY SHUTDOWN SYSTEMS (ESD)
   A. Interlocks
   B. Protective Devices

16. MULTIPLE METHODS AND DELIVERY OF INSTRUCTION: Instructor-initiated learning strategies. A paragraph **must** be written by the instructor for classroom instruction **for all** courses.

This course provides course content in person and on screen in written form. The syllabus, assignments, linked pages, and other content will be delivered through the course Web page. Discussion forums, chat rooms, and private e-mail will be used to enhance the delivery of the course and to provide interaction between students and between students and the instructor.

17. ASSESSMENT METHODS: (Measurements of learning outcomes. *If rubrics have been developed for scoring the robust course-level SLOs, please attach.)*

Assessment Method	**Describe the style and content of each assessment method to be used in measuring SLOs.**
Quizzes	12 Quizzes made up of true/false, multiple choice or fill in
Written Assignments	Situational Procedures based on a scenario.
Midterm Examination	1 Midterm made up of true/false, multiple choice or fill in as well as a scenario based problem.
Essay Examination	
Objective	

Assessment Method	**Describe the style and content of each assessment method to be used in measuring SLOs.**
Examination	
Reports	
Projects	
Mathematical and Problem-Solving Exercises	Conversion formulas, pressure computations flow estimates
Non-Mathematical Problem-Solving Exercises	10 Scenario based problem solving assignments.
Skills Demonstration	
Final Examination	1 Final made up of true/false, multiple choice or fill in as well as a scenario based problem
Other	

18. RECOMMENDED TEXTBOOK(S):

Instrumentation
ISBN #: 0-536-85949-3

ISSUE January 2005

19. SUPPLEMENTAL READING:

Coastline College's Virtual Library: http://library.coastline.edu

None

20. OTHER REQUIRED SUPPLIES AND MATERIALS:

None

Prepared by: _Nancy S. (Chamberlain) Jones

Department Chair: __Nancy S. (Chamberlain) Jones

Discipline Dean: ___Joumana McGowan

Distance Learning Dean: __Vince Rodriguez

Date of Curriculum Committee Meeting: November 16, 2007 - New

Approved _X__ Disapproved _____ Tabled:_____

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CIP: _____

Coastline Community College
Course Outline of Record

Original: ____ Date: February 11, 2008

Revision: X Date: March 3, 2010

1. DISCIPLINE: Electromechanical Technology, Environmental Technology Industrial Technologies, Mining and Metallurgy

2. COURSE ID NUMBER: PTEC C281

3. COURSE TITLE: Work Based Learning

4. ABBREVIATED TITLE: Work Based Learning

5. COURSE UNITS: 1.0

6. TOTAL SEMESTER HOURS: 0 Lecture 90 Non-Lecture

7. REPEATABILITY: Yes X No ____ If yes, how many times? 3 (Explain in #17)

8. GRADING METHOD: (Check One)

   Student Option X Letter Grade ____ Pass/No Pass ____ Non-Credit ____

9. PREREQUISITE: Be employed or volunteer in a field related to Process Technology for 5 hours per week per 1 unit of Work Based Learning.

10. COREQUISITE: Be enrolled in a total of 7 units including Work Based Learning

11. ADVISORY: None

12. MATERIAL FEE: None

13. CATALOG DESCRIPTION:

    To enhance each Work Based Learning participant's opportunity for success in the field of Process Technology by bridging the gap between educational theory and on-the-job practices through individualized performance objectives related to the student's career or occupational goal in Process Technology. This course may be taken 4 times.

14. SCHEDULE DESCRIPTION:

    To enhance each Work Based Learning participant's opportunity for success in the field of Process Technology by bridging the gap between educational theory and on-the-job practices through individualized performance objectives related to the student's career or occupational goal in Process Technology.

15. STUDENT LEARNING OUTCOMES:
After successful completion of the course, the student will be able to do the following:

***Course-Level Outcomes*:**

1. Apply and build on theoretical and practical education in the performance of work tasks in chosen field.

2. Based on self-evaluation and supervisor feedback, develop appropriate professional development and career advancement goals.

16. COURSE CONTENT:

I. Student Orientation
   A. Faculty / Student Contact: Telephone/Screening
   B. Faculty / Student Meeting
      1. Application
      2. Interview
   C. Draft Performance Objectives

II. On-Site Visit with Employer/Supervisor
   A. Employer Orientation
      1. Benefits to Students
      2. Benefits to Employer
   B. Review of Performance Objectives
      1. Employer Input
      2. Student Input
      3. Faculty Input
   C. Review of Performance Objectives Evaluation Criteria and Evaluation Procedure
      1. Identification of Specific Criteria and Documentation for Successful Completion of Performance Objectives
      2. Explanation and Review for End of the Semester Evaluation Procedure

III. Student Follow-Up and Retention
   A. Telephone Follow-up with Student
   B. Mail Follow-up with Student

VI. End of the Semester Evaluation
   A. Letter to the Student
   B. Letter and Performance Objectives to the Employer
   C. Performance Objectives Returned by Employer
   D. Faculty Review Student Performance Objectives and Supporting Documentation, Assign Grade, and Verify Units of Credit

17. REPEATABILITY CONTENT EXPLAINED:

May be repeated three times. Each time this course is repeated, new work place project objectives will be created for each unit earned.

18. CLASSROOM INSTRUCTION:

The work experience education program is based upon personalized learning experiences, facilitated by faculty experienced both in Management by Objectives theory and relevant classroom theory. Varied instructional methodologies and delivery systems will be used, as appropriate to each student's workplace learning opportunities and needs.

19. STUDENT ACTIVITIES:

All students will meet in-person with the faculty members and with the employer/supervisor on an on-going basis throughout the semester to develop, accomplish and evaluate the learning goals set for him/her self. The performance standards for each job-oriented learning objective will be specified as part of the student's learning contract.

20. ASSESSMENT METHODS:
Measurements of learning outcomes. *If rubrics have been developed for scoring the robust course-level SLO's, please attach.*

Assessment Method	**Describe the style and content of each assessment method to be used in measuring SLO's.**
Quizzes	None
Written Assignments	Work-based assignments as related to the students' workplace projects for each unit earned
Midterm Examination	None
Essay Examination	None
Objective Examination	None
Reports	Reports will be required of the student to track progress
Projects	One work place project with evaluations is included based on mutually agreed upon assignments
Mathematical Problem Solving Exercises	None
Non-Mathematical Problem Solving Exercises	One work place summary as related to Computer Service Technology.
Skills Demonstration	Work-based exercises if applicable to the project designed
Final Examination	Final report summary of work based learning experiences
Other	None

21. RECOMMENDED BOOK(S):

Work Based Learning Student Handbook Current Edition (Revised Annually). Any manuals reference materials, job-site documents related to the successful completions of student's job-oriented learning.

22. SUPPLEMENTAL READING:

Coastline Community College's Virtual Library: http://coastline.edu/library

23. OTHER REQUIRED SUPPLIES AND MATERIALS:

Any manuals, reference materials, job-site documents related to the successful completions of student's job-oriented learning.

24. Baseline Enrollment: 40 Division # 303 Department : Process Technology

25. Coastline Community College is dedicated to ensuring that all students who earn an A.A. degree will have mastered the Eight Core Degree-Level Outcomes. Listed below.

Indicate the degree-level outcomes addressed in this course. Please check all that apply.

1.		Demonstrate understanding and appreciation for the visual and performing arts
2.		Demonstrate ethical civic, environmental, and social responsibility
3.		Demonstrate ability to apply critical thinking and analysis
4.		Demonstrate innovative thinking, adaptability, and creative problem-solving skills
5.		Demonstrate understanding and respect for cultural and global diversity
6.		Demonstrate information competency
7.		Use effective communication and interpersonal skills
8.		Use scientific and quantitative reasoning

Type the following appropriate names:

Originating Faculty: Ron Smith

Department Chair: Ron Smith

Discipline Dean: Dr. Joumana McGowan

Distance Learning Dean: Vince Rodriguez

Curriculum Committee Meeting Date: March 26, 2010

Approved: X Disapproved: ____ Tabled: ____

New: ____ Revised: X

Process Technology Program Review Appendix D Faculty Survey Results

2011

Review Team
Ronald Smith, Lead Faculty

Appendix D: Faculty Survey Results and Recommendations

PTECFall2010FacultySurvey SurveyMonkey

1. At which location or in which delivery mode are you currently teaching classes in this program. ***(Mark all that apply, including Military Program classes.)***

	Response Percent	Response Count
Coastline Costa Mesa Center	0.0%	0
Coastline Garden Grove Center	**100.0%**	**1**
Coastline Le-Jao Center	0.0%	0
Estancia High School	0.0%	0
Fountain Valley High School	0.0%	0
Online	**100.0%**	**1**
Telecourse/Cable/Video	0.0%	0
Other (please specify)	0.0%	0
	answered question	**1**
	skipped question	**0**

2. Please rate your level of satisfaction with each of the following as related to this program. ***(Skip any item that is not applicable to you.)***

	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Response Count
Currency of the curriculum (up-to-date in relation to transfer standards and SLOs)	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Variety of classes	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Delivery modes appropriate to student needs	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Relevance of classes to student needs	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Opportunity for faculty to participate in curriculum review and program development	0.0% (0)	0.0% (0)	**100.0% (1)**	0.0% (0)	1
Extent to which faculty and staff meet the needs of culturally diverse students	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Extent to which faculty and staff meet the needs of non-traditional students (e.g., older adults, working adults, active duty military, etc.)	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Overall quality of the program	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Your own success teaching in the program	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
If you indicated that you were Dissatisfied or Very Dissatisfied with any of the above items, please describe your concerns.					1
				answered question	**1**
				skipped question	**0**

3. Please rate your level of satisfaction with each of the following as related to this program. ***(Skip any item that is not applicable to you.)***

	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Response Count
Adequacy of instructional facilities	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Quality of general instructional equipment (audio-visual, instructor classroom computer and projector, etc.)	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Support for the program and classes from Dean and support staff for your discipline	0.0% (0)	0.0% (0)	**100.0% (1)**	0.0% (0)	1
Support for you, your classes, and the program from your department chair	0.0% (0)	0.0% (0)	**100.0% (1)**	0.0% (0)	1
Responsiveness and helpfulness of Coastline's Distance Learning Department in meeting your needs as a DL instructor	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Extent to which Seaport tools and options allow you to teach your class(es) in the way you want	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
If you indicated that you were Dissatisfied or Very Dissatisfied with any of the above items, please describe your concerns.					1
				answered question	**1**
				skipped question	**0**

4. Do you teach classes for Coastline's Military Program?		
	Response Percent	Response Count
Yes	0.0%	0
No	100.0%	1
	answered question	1
	skipped question	0

5. Please indicate your level of satisfaction with each of the following items.					
	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Response Count
The way in which you are able to deliver instruction for military students	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
The support you receive from the Military Program staff	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
Do you have any comments or concerns specifically related to this program's classes for military students.					0
				answered question	0
				skipped question	1

6. Please indicate your preferences regarding scheduling options for courses in this program.				
	Preferred	OK	Not Preferred	Response Count
16-week classes	**100.0% (1)**	0.0% (0)	0.0% (0)	1
12-week classes	0.0% (0)	**100.0% (1)**	0.0% (0)	1
8-week classes	0.0% (0)	0.0% (0)	**100.0% (1)**	1
4-week classes	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Intensive weekend classes	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Intensive week-long classes that meet daily	0.0% (0)	0.0% (0)	**100.0% (1)**	1
			Other (please specify)	0
			answered question	**1**
			skipped question	**0**

7. Please indicate your preferred delivery formats for classes in this program.				
	Preferred	OK	Not Preferred	Response Count
Classroom	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Online	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Telecourse/Cable/Video	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Hybrid (combination of classroom and online)	0.0% (0)	**100.0% (1)**	0.0% (0)	1
			Other (please specify)	0
			answered question	**1**
			skipped question	**0**

8. Please indicate the methods you most often use to measure/assess whether students are achieving the outcomes you expect in your course(s).

	Frequently	Sometimes	Rarely	Not at all	Response Count
Participation	**100.0% (1)**	0.0% (0)	0.0% (0)	0.0% (0)	1
Objective tests (multiple choice, true/false, short answer, etc.)	**100.0% (1)**	0.0% (0)	0.0% (0)	0.0% (0)	1
Written assignments	**100.0% (1)**	0.0% (0)	0.0% (0)	0.0% (0)	1
Essay tests	0.0% (0)	0.0% (0)	**100.0% (1)**	0.0% (0)	1
Skill demonstration	0.0% (0)	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Case studies	**100.0% (1)**	0.0% (0)	0.0% (0)	0.0% (0)	1
Individual projects	0.0% (0)	0.0% (0)	**100.0% (1)**	0.0% (0)	1
Group projects	0.0% (0)	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Student self-report of application of knowledge/skill to daily life	0.0% (0)	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Pre and post tests of abilities	0.0% (0)	0.0% (0)	**100.0% (1)**	0.0% (0)	1
Portfolios	0.0% (0)	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Grading rubrics for assignments/observations	**100.0% (1)**	0.0% (0)	0.0% (0)	0.0% (0)	1
Are there any other methods you use to assess student learning outcomes?					0
answered question					**1**
skipped question					**0**

9. What steps, if any, have you taken to incorporate student learning outcomes (SLOs) into your course? *(Mark all that apply.)*

	Response Percent	Response Count
I haven't yet identified expected student learning outcomes.	0.0%	0
I am attempting to identify expected SLOs but need some assistance.	0.0%	0
I am working with other faculty in my discipline to identify expected SLOs.	0.0%	0
I have identified expected SLOs.	**100.0%**	**1**
My course outline has been updated by me or someone else to include expected SLOs.	**100.0%**	**1**
I have developed a plan for assessing SLOs.	**100.0%**	**1**
I assess students on expected SLOs no less than once a year.	**100.0%**	**1**
I use results from SLO assessments to modify my instruction.	**100.0%**	**1**
I discuss results from SLO assessments with other faculty in my department so that we can make decisions about teaching and assessment, needed resources, planning, and budgeting based on actual learning outcomes.	0.0%	0
	answered question	**1**
	skipped question	**0**

10. Which style manual or guidelines do you require students to use for research papers?

	Response Percent	Response Count
MLA	0.0%	0
APA	100.0%	1
Chicago	0.0%	0
Turabian	0.0%	0
Custom/Self-Developed (by instructor)	0.0%	0
I don't specify a style manual	0.0%	0
I don't assign research papers	0.0%	0
	answered question	**1**
	skipped question	**0**

11. Which best describes your use of Coastline's Virtual Library?

	Response Percent	Response Count
I use the Virtual Library myself and/or give my students regular or extra credit assignments that require use of the Virtual Library.	0.0%	0
I neither use the Virtual Library nor require my students to use the Virtual Library.	**100.0%**	**1**
	answered question	**1**
	skipped question	**0**

12. Please rank the reasons that you do not use the Virtual Library or that you do not require your students to use it.

	Primary Reasons	Secondary Reasons	Not a Factor	Response Count
I didn't know Coastline had a Virtual Library.	**100.0% (1)**	0.0% (0)	0.0% (0)	1
I don't know how to access the Virtual Library.	0.0% (0)	**100.0% (1)**	0.0% (0)	1
The log-in procedure is too complicated.	0.0% (0)	0.0% (0)	**100.0% (1)**	1
I don't understand the organization of content in the Virtual Library.	0.0% (0)	**100.0% (1)**	0.0% (0)	1
I can't remember my log-in and password.	0.0% (0)	**100.0% (1)**	0.0% (0)	1
I do not require research assignments in my classes.	0.0% (0)	**100.0% (1)**	0.0% (0)	1
I don't have time to review/grade library assignments/research papers.	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Other	0.0% (0)	0.0% (0)	**100.0% (1)**	1
			If you indicate "Other," please specify.	0
			answered question	**1**
			skipped question	**0**

13. In which of the following professional development activities have you participated within the past two years? *(Mark all that apply.)*

	Response Percent	Response Count
CCC All-College Meeting in Fall and Spring	**100.0%**	**1**
Discipline-related workshops	**100.0%**	**1**
Coastline Summer Technology Institute	**100.0%**	**1**
Other technology-related workshops	**100.0%**	**1**
Student learning outcomes workshops/training	**100.0%**	**1**
Other workshops	0.0%	0
Membership in professional associations	**100.0%**	**1**
Professional conferences	**100.0%**	**1**
Graduate classes/program	0.0%	0
Other classes	**100.0%**	**1**
Professional training, including certification programs	0.0%	0
Discipline-related reading	**100.0%**	**1**
Technology-related reading	**100.0%**	**1**
None of the above	0.0%	0
Other	0.0%	0
	answered question	**1**
	skipped question	**0**

14. Please list any awards, honors, and/or grants you have received in the past three years.	
	Response Count
	0
answered question	0
skipped question	1

15. List the college, district, statewide, and/or professional committees on which you have served during the past three years.	
	Response Count
	0
answered question	0
skipped question	1

16. What specific types of training or guidance, if any, do you believe would help you to improve the quality of instruction in your classes so that you can better help students achieve desired learning outcomes?	
	Response Count
	0
answered question	0
skipped question	1

17. Are there other courses in this program that you would like Coastline to offer?	
	Response Count
	1
answered question	1
skipped question	0

18. As part of this review, the program will be identifying new five-year goals for the program. Please suggest one or more goals that you believe would be important for the program to pursue.	
	Response Count
	1
answered question	1
skipped question	0

19. Do you have any other comments or suggestions for improving the program?	
	Response Count
	0
answered question	0
skipped question	1

PTech2010-2011Student Survey

SurveyMonkey

1. From the following choices, rank the top 3 reasons for taking PTech classes.

	1st Reason	2nd Reason	3rd Reason	Response Count
To satisfy A.A. degree requirements	**53.8% (7)**	38.5% (5)	7.7% (1)	13
To satisfy transfer requirements	0.0% (0)	0.0% (0)	**100.0% (1)**	1
To earn a certificate	18.2% (2)	36.4% (4)	**45.5% (5)**	11
To prepare for a new job or improve job skills	**56.3% (9)**	31.3% (5)	12.5% (2)	16
For personal interest	0.0% (0)	**66.7% (2)**	33.3% (1)	3
Convenience	0.0% (0)	25.0% (1)	**75.0% (3)**	4
Other	0.0% (0)	0.0% (0)	**100.0% (2)**	2
			answered question	**18**
			skipped question	**0**

2. To what extent do the classes you are taking in this program meet your expectations? (Please choose only one answer.)

	Response Percent	Response Count
The classes are even better than I expected	38.9%	7
The classes are pretty much what I expected	**61.1%**	**11**
The classes are not as good as I expected	0.0%	0
If you indicated that the class is not as good as you expected, please describe your concerns.		2
	answered question	**18**
	skipped question	**0**

3. Have you learned new information about process technology industry from this course?

	Response Percent	Response Count
Yes	**100.0%**	**18**
No	0.0%	0
	answered question	**18**
	skipped question	**0**

4. Have you heard any information that conflicts with your training in the field?

	Response Percent	Response Count
Yes	16.7%	3
No	**83.3%**	**15**
	answered question	**18**
	skipped question	**0**

5. Please rate your level of satisfaction with each of the following as related to classes in this program. *(Provide only one response for each row.)*

	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Not Applicable	Response Count
Quality of instruction	**66.7% (12)**	27.8% (5)	5.6% (1)	0.0% (0)	0.0% (0)	18
Scheduling of classes (time of day, length of class sessions, days of week)	**83.3% (15)**	11.1% (2)	0.0% (0)	0.0% (0)	5.6% (1)	18
Relevance (Concepts and Applications) to your vocational, academic, or personal goals	**72.2% (13)**	27.8% (5)	0.0% (0)	0.0% (0)	0.0% (0)	18
Overall quality of the PTech Program	**66.7% (12)**	33.3% (6)	0.0% (0)	0.0% (0)	0.0% (0)	18
Your own success in the PTech Program	**55.6% (10)**	38.9% (7)	5.6% (1)	0.0% (0)	0.0% (0)	18
If you answered Dissatisfied or Very Dissatisfied to any of the above items, please describe your concerns.						1
					answered question	**18**
					skipped question	**0**

6. Do you agree with these statements: ***(Provide only one response for each row.)***

	Agree	Neutral	Disagree	Response Count
These courses will help me do my job more safely.	**88.9% (16)**	11.1% (2)	0.0% (0)	18
I am more "energy conscious".	**76.5% (13)**	23.5% (4)	0.0% (0)	17
I am better equipped to protect the environment.	**94.1% (16)**	5.9% (1)	0.0% (0)	17
I better understand the mechanical aspects of a process facility.	**100.0% (17)**	0.0% (0)	0.0% (0)	17
My acquired knowledge of process technology will make me more likely to be hired within the industry.	**70.6% (12)**	23.5% (4)	5.9% (1)	17
			answered question	**18**
			skipped question	**0**

7. Age

		Response Percent	Response Count
Under 18		0.0%	0
18-30		22.2%	4
31-45		33.3%	6
46-60		**38.9%**	**7**
61 or older		5.6%	1
		answered question	**18**
		skipped question	**0**

8. Gender

	Response Percent	Response Count
Male	**88.9%**	**16**
Female	11.1%	2
	answered question	**18**
	skipped question	**0**

9. What is your ethnicity?

	Response Percent	Response Count
African-American	0.0%	0
American Indian/Native Alaskan	0.0%	0
White	**44.4%**	**8**
Hispanic	11.1%	2
Vietnamese	5.6%	1
Other Asian	16.7%	3
Decline to State	11.1%	2
Other (please specify)	11.1%	2
	answered question	**18**
	skipped question	**0**

10. What is your primary language (the language you are most comfortable speaking, reading, or writing)?

	Response Percent	Response Count
English	**88.9%**	**16**
Spanish	0.0%	0
Vietnamese	0.0%	0
Other (please specify)	11.1%	2
	answered question	**18**
	skipped question	**0**

11. Are you active duty military?

	Response Percent	Response Count
Yes	0.0%	0
No	**100.0%**	**18**
	answered question	**18**
	skipped question	**0**

12. In your own words, please tell us what you most want to learn or accomplish from participating in the PTech Program?

	Response Count
	17
answered question	**17**
skipped question	**1**

13. How long have you been attending the Process Technology Program?

	Response Count
	18
answered question	**18**
skipped question	**0**

14. Do you have any other comments or recommendations?

	Response Count
	13
answered question	**13**
skipped question	**5**

Page 2, Q2. To what extent do the classes you are taking in this program meet your expectations? (Please choose only one answer.)

1	I have taken six of the PTEC courses and I have problems with some of the questions on the quizes and exams for C111 C115. For example I had marked some True-False questions one way and got them wrong and was sent an email that I could take the quiz again and marked the these same questions the other way (which I thought was wrong) and they were wrong again. It is very trying to not be able to get a correct score when a percentage like 90% is an A. These questions and answers need to be reviewed.	Mar 19, 2011 8:03 PM
2	problems with CAPT modules and RDC modules when course is solely based on them (PTEC 114)	Mar 20, 2011 5:15 PM

Page 3, Q5. Please rate your level of satisfaction with each of the following as related to classes in this program. (Provide only one response for each row.)

1	because of the Capt modules I have low class grades in PTEC 114	Mar 20, 2011 5:17 PM

Page 4, Q9. What is your ethnicity?

1	Filipino American	Mar 14, 2011 8:21 PM

Page 4, Q9. What is your ethnicity?		
2	AMERICAN	Mar 20, 2011 5:18 PM

Page 5, Q10. What is your primary language (the language you are most comfortable speaking, reading, or writing)?		
1	Filipino	Mar 9, 2011 8:19 PM
2	Bengali	Mar 12, 2011 11:02 PM

Page 6, Q12. In your own words, please tell us what you most want to learn or accomplish from participating in the PTech Program?		
1	To participate and work as a group with others respecting their point of view and giving constructive feedback.	Mar 9, 2011 2:08 PM
2	Better understanding of my plants and process.	Mar 9, 2011 2:13 PM
3	I want to learn the fundamental knowledge that will prepare me for my futrue career.	Mar 9, 2011 2:58 PM
4	I would like to learn basic information on the industry, so that when I interview I will be able to answer questions with a better degree of knowledge.	Mar 9, 2011 4:20 PM
5	Discussion process is very informative. It gave me a chance to meet other people in my line of work without actually leaving my home.	Mar 9, 2011 8:25 PM
6	I took the PTech certificate program to become knowledgable about the role and functions of a process technician to make a career change.	Mar 11, 2011 5:55 PM
7	Earn a certificate and use that certificate to get into the process technology industry.	Mar 12, 2011 8:59 AM
8	I want ro learn practical with theory	Mar 12, 2011 11:04 PM
9	I would like to train for a new career in refinery process technology.	Mar 13, 2011 7:33 PM
10	I would like to get an AA or AS in Process Technology. What I learn here will help me in the field.	Mar 14, 2011 2:22 PM
11	I want to learn the basic overall processes within the Process industry, which I am currently learning.	Mar 14, 2011 8:22 PM
12	I would like be prepared for employment to this field, in a good position.	Mar 15, 2011 3:32 PM
13	I would like to obtain a certificate of Process Technology.	Mar 17, 2011 7:11 PM
14	I am already employed in the field, however, I wanted to learn more about various field proecesses and devices.	Mar 17, 2011 9:19 PM
15	I needed to get anouther career option.	Mar 19, 2011 8:07 PM
16	I want to get an AA. and then a BA.	Mar 20, 2011 5:20 PM
17	Obtain AA Degree	Mar 20, 2011 7:21 PM

Page 6, Q13. How long have you been attending the Process Technology Program?		
1	these will be my 3rd semester	Mar 9, 2011 2:08 PM
2	Two years	Mar 9, 2011 2:13 PM
3	I have been attending the Ptech program for 2 years	Mar 9, 2011 2:58 PM
4	This is my first semester.	Mar 9, 2011 4:20 PM
5	summer of 2009.	Mar 9, 2011 8:25 PM
6	I have been attending the Process Technology Program for three (consecutive) semesters.	Mar 10, 2011 8:11 PM
7	1 year and 3 months	Mar 11, 2011 5:55 PM
8	One and a half years, I work and take classes.	Mar 12, 2011 8:59 AM
9	upto graduate or 4 yrs	Mar 12, 2011 11:04 PM
10	about a year	Mar 13, 2011 7:33 PM
11	This is my first semester.	Mar 14, 2011 2:22 PM
12	first semester.	Mar 14, 2011 8:22 PM
13	19 months	Mar 15, 2011 3:32 PM
14	Since the summer of 2009.	Mar 17, 2011 7:11 PM
15	This is my first class in the program.	Mar 17, 2011 9:19 PM
16	Spring 2010	Mar 19, 2011 8:07 PM
17	3 semesters	Mar 20, 2011 5:20 PM
18	In 2009 one class, 2 in 2010, and so far 3 in 2011	Mar 20, 2011 7:21 PM

Page 6, Q14. Do you have any other comments or recommendations?		
1	Teachers are great there is nothing bad or negative to say a bout them , so far from all the classes that i have been taking i have 0 regrets. Thank you for all the hours dedicated to this course..	Mar 9, 2011 2:08 PM
2	The CAPT web modules are always a problem because they do not open and only some people can get them. Find a better way to get this information to the students. This information is really good and should be more easily accessed.	Mar 9, 2011 2:13 PM
3	I strongly recommend the Ptech internship program to become more available to current student.	Mar 9, 2011 2:58 PM
4	I think the CAPT modules need some revamping. They are hard to get into at times, and range from missing illustrations to bad grammar. I also don't like the fact that some of these only give you a minute to answer the question.	Mar 9, 2011 4:20 PM
5	Develop a more user friendly software. The program is good but could have more room for improvement.	Mar 9, 2011 8:25 PM
6	None	Mar 11, 2011 5:55 PM
7	I need more vedio more practical and internisheep program	Mar 12, 2011 11:04 PM
8	So far I have been satisified with the quality of the courses. Instructors do a good job posting grades and score only some of the time.	Mar 14, 2011 2:22 PM
9	For this, or any online program - little or NO downtime.	Mar 14, 2011 8:22 PM
10	The instructors are very good.	Mar 17, 2011 7:11 PM
11	I am new to the CCC distance learning program so I am still acclimating to the structure and pace of the class.	Mar 17, 2011 9:19 PM
12	The Introduction to Computers class was hard but very helpful and the instructor was the best at answering emails. Some of the other insturctors would not answer emails.	Mar 19, 2011 8:07 PM
13	Get rid of the CAPT modules in ptec 114 these peoiple had to buy these books and we are not even using them	Mar 20, 2011 5:20 PM

Program Review 2011-12
Validation Report

Process Technology Program

1. Has the program adequately responded to the elements identified in the outline for instructional or student services programs (see appropriate checklist)?

   __X__ Yes ____ No

2. List the most important things (issues, trends, concerns, etc.) that are apparent from this report:

   A. There is ongoing demand for people trained in process technology. This reflects the diversity of industries which rely upon these skills and the fact that positions are opening up due to retirements.

   B. The PTEC program has achieved some notable successes. Students earned 22 certificates during the last 2 years and an additional 6 students earned the certificate and an AA degree. This program is in second place for generating the most certificates at Coastline. This is also one of the only online PTEC programs available.

   C. The program is suffering from lack of leadership. The part-time faculty who staff the program have done an outstanding job, but they are intrinsically limited in what they can do. There is a critical need for a new CTE Dean who can take a leadership role in promoting this program and expanding it into areas beyond the petroleum industry, such as water and sewage treatment and other utilities.

3. Does the data substantiate the conclusions and recommendations made?

   __X__ Yes ____ No

4. List any realistic suggestions the Steering Committee may have for the program based on information in the self-study.

   A. Develop the leadership infrastructure to move the program forward. This includes the hiring of a full-time CTE Dean and possibly a CTE coordinator or division chair. The program also needs to expand their advisory committee to include participation from industries other than petroleum processing.

   B. Develop a marketing/outreach plan to draw in new students and tap into potential industry partners.

   C. Improve student access to training simulations through industry partnerships to provide facilities and/or improved online simulations.

   D. With support from the college, continue improving online delivery of courses, including integration into Seaport 3.0 and updating learning modules to utilize better graphics and simulations.

5. List program accomplishments and aspects for which the program should be commended.

A. With only part-time faculty and limited support from the college the program has gotten off the ground and demonstrated viability and student success.

B. The program has been successful in placing graduates into career positions.

C. With limited resources and only part-time faculty the curriculum has been successfully updated.

PTECFall2010FacultySurvey

1. At which location or in which delivery mode are you currently teaching classes in this program. ***(Mark all that apply, including Military Program classes.)***

	Response Percent	Response Count
Coastline Costa Mesa Center	0.0%	0
Coastline Garden Grove Center	**100.0%**	**1**
Coastline Le-Jao Center	0.0%	0
Estancia High School	0.0%	0
Fountain Valley High School	0.0%	0
Online	**100.0%**	**1**
Telecourse/Cable/Video	0.0%	0
Other (please specify)	0.0%	0
	answered question	**1**
	skipped question	**0**

2. Please rate your level of satisfaction with each of the following as related to this program. *(Skip any item that is not applicable to you.)*

	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Response Count
Currency of the curriculum (up-to-date in relation to transfer standards and SLOs)	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Variety of classes	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Delivery modes appropriate to student needs	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Relevance of classes to student needs	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Opportunity for faculty to participate in curriculum review and program development	0.0% (0)	0.0% (0)	**100.0% (1)**	0.0% (0)	1
Extent to which faculty and staff meet the needs of culturally diverse students	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Extent to which faculty and staff meet the needs of non-traditional students (e.g., older adults, working adults, active duty military, etc.)	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Overall quality of the program	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Your own success teaching in the program	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
If you indicated that you were Dissatisfied or Very Dissatisfied with any of the above items, please describe your concerns.					1

answered question	**1**
skipped question	**0**

3. Please rate your level of satisfaction with each of the following as related to this program. *(Skip any item that is not applicable to you.)*

	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Response Count
Adequacy of instructional facilities	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Quality of general instructional equipment (audio-visual, instructor classroom computer and projector, etc.)	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Support for the program and classes from Dean and support staff for your discipline	0.0% (0)	0.0% (0)	**100.0% (1)**	0.0% (0)	1
Support for you, your classes, and the program from your department chair	0.0% (0)	0.0% (0)	**100.0% (1)**	0.0% (0)	1
Responsiveness and helpfulness of Coastline's Distance Learning Department in meeting your needs as a DL instructor	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Extent to which Seaport tools and options allow you to teach your class(es) in the way you want	0.0% (0)	**100.0% (1)**	0.0% (0)	0.0% (0)	1
If you indicated that you were Dissatisfied or Very Dissatisfied with any of the above items, please describe your concerns.					1

answered question	**1**
skipped question	**0**

4. Do you teach classes for Coastline's Military Program?

	Response Percent	Response Count
Yes	0.0%	0
No	**100.0%**	**1**
	answered question	**1**
	skipped question	**0**

5. Please indicate your level of satisfaction with each of the following items.

	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Response Count
The way in which you are able to deliver instruction for military students	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
The support you receive from the Military Program staff	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
Do you have any comments or concerns specifically related to this program's classes for military students.					0
				answered question	**0**
				skipped question	**1**

6. Please indicate your preferences regarding scheduling options for courses in this program.

	Preferred	OK	Not Preferred	Response Count
16-week classes	**100.0% (1)**	0.0% (0)	0.0% (0)	1
12-week classes	0.0% (0)	**100.0% (1)**	0.0% (0)	1
8-week classes	0.0% (0)	0.0% (0)	**100.0% (1)**	1
4-week classes	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Intensive weekend classes	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Intensive week-long classes that meet daily	0.0% (0)	0.0% (0)	**100.0% (1)**	1
			Other (please specify)	0
			answered question	**1**
			skipped question	**0**

7. Please indicate your preferred delivery formats for classes in this program.

	Preferred	OK	Not Preferred	Response Count
Classroom	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Online	**100.0% (1)**	0.0% (0)	0.0% (0)	1
Telecourse/Cable/Video	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Hybrid (combination of classroom and online)	0.0% (0)	**100.0% (1)**	0.0% (0)	1
			Other (please specify)	0
			answered question	**1**
			skipped question	**0**

8. Please indicate the methods you most often use to measure/assess whether students are achieving the outcomes you expect in your course(s).

	Frequently	Sometimes	Rarely	Not at all	Response Count
Participation	**100.0% (1)**	0.0% (0)	0.0% (0)	0.0% (0)	1
Objective tests (multiple choice, true/false, short answer, etc.)	**100.0% (1)**	0.0% (0)	0.0% (0)	0.0% (0)	1
Written assignments	**100.0% (1)**	0.0% (0)	0.0% (0)	0.0% (0)	1
Essay tests	0.0% (0)	0.0% (0)	**100.0% (1)**	0.0% (0)	1
Skill demonstration	0.0% (0)	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Case studies	**100.0% (1)**	0.0% (0)	0.0% (0)	0.0% (0)	1
Individual projects	0.0% (0)	0.0% (0)	**100.0% (1)**	0.0% (0)	1
Group projects	0.0% (0)	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Student self-report of application of knowledge/skill to daily life	0.0% (0)	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Pre and post tests of abilities	0.0% (0)	0.0% (0)	**100.0% (1)**	0.0% (0)	1
Portfolios	0.0% (0)	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Grading rubrics for assignments/observations	**100.0% (1)**	0.0% (0)	0.0% (0)	0.0% (0)	1
Are there any other methods you use to assess student learning outcomes?					0
				answered question	**1**
				skipped question	**0**

9. What steps, if any, have you taken to incorporate student learning outcomes (SLOs) into your course? *(Mark all that apply.)*

	Response Percent	Response Count
I haven't yet identified expected student learning outcomes.	0.0%	0
I am attempting to identify expected SLOs but need some assistance.	0.0%	0
I am working with other faculty in my discipline to identify expected SLOs.	0.0%	0
I have identified expected SLOs.	**100.0%**	**1**
My course outline has been updated by me or someone else to include expected SLOs.	**100.0%**	**1**
I have developed a plan for assessing SLOs.	**100.0%**	**1**
I assess students on expected SLOs no less than once a year.	**100.0%**	**1**
I use results from SLO assessments to modify my instruction.	**100.0%**	**1**
I discuss results from SLO assessments with other faculty in my department so that we can make decisions about teaching and assessment, needed resources, planning, and budgeting based on actual learning outcomes.	0.0%	0
	answered question	**1**
	skipped question	**0**

10. Which style manual or guidelines do you require students to use for research papers?

	Response Percent	Response Count
MLA	0.0%	0
APA	**100.0%**	**1**
Chicago	0.0%	0
Turabian	0.0%	0
Custom/Self-Developed (by instructor)	0.0%	0
I don't specify a style manual	0.0%	0
I don't assign research papers	0.0%	0
	answered question	**1**
	skipped question	**0**

11. Which best describes your use of Coastline's Virtual Library?

	Response Percent	Response Count
I use the Virtual Library myself **and/or** give my students regular or extra credit assignments that require use of the Virtual Library.	0.0%	0
I neither use the Virtual Library nor require my students to use the Virtual Library.	**100.0%**	**1**
	answered question	**1**
	skipped question	**0**

12. Please rank the reasons that you do not use the Virtual Library or that you do not require your students to use it.

	Primary Reasons	Secondary Reasons	Not a Factor	Response Count
I didn't know Coastline had a Virtual Library.	**100.0% (1)**	0.0% (0)	0.0% (0)	1
I don't know how to access the Virtual Library.	0.0% (0)	**100.0% (1)**	0.0% (0)	1
The log-in procedure is too complicated.	0.0% (0)	0.0% (0)	**100.0% (1)**	1
I don't understand the organization of content in the Virtual Library.	0.0% (0)	**100.0% (1)**	0.0% (0)	1
I can't remember my log-in and password.	0.0% (0)	**100.0% (1)**	0.0% (0)	1
I do not require research assignments in my classes.	0.0% (0)	**100.0% (1)**	0.0% (0)	1
I don't have time to review/grade library assignments/research papers.	0.0% (0)	0.0% (0)	**100.0% (1)**	1
Other	0.0% (0)	0.0% (0)	**100.0% (1)**	1
			If you indicate "Other," please specify.	0
			answered question	**1**
			skipped question	**0**

13. In which of the following professional development activities have you participated within the past two years? ***(Mark all that apply.)***

	Response Percent	Response Count
CCC All-College Meeting in Fall and Spring	**100.0%**	**1**
Discipline-related workshops	**100.0%**	**1**
Coastline Summer Technology Institute	**100.0%**	**1**
Other technology-related workshops	**100.0%**	**1**
Student learning outcomes workshops/training	**100.0%**	**1**
Other workshops	0.0%	0
Membership in professional associations	**100.0%**	**1**
Professional conferences	**100.0%**	**1**
Graduate classes/program	0.0%	0
Other classes	**100.0%**	**1**
Professional training, including certification programs	0.0%	0
Discipline-related reading	**100.0%**	**1**
Technology-related reading	**100.0%**	**1**
None of the above	0.0%	0
Other	0.0%	0
	answered question	**1**
	skipped question	**0**

14. Please list any awards, honors, and/or grants you have received in the past three years.

	Response Count
	0
answered question	**0**
skipped question	**1**

15. List the college, district, statewide, and/or professional committees on which you have served during the past three years.

	Response Count
	0
answered question	**0**
skipped question	**1**

16. What specific types of training or guidance, if any, do you believe would help you to improve the quality of instruction in your classes so that you can better help students achieve desired learning outcomes?

	Response Count
	0
answered question	**0**
skipped question	**1**

17. Are there other courses in this program that you would like Coastline to offer?

	Response Count
	1
answered question	**1**
skipped question	**0**

18. As part of this review, the program will be identifying new five-year goals for the program. Please suggest one or more goals that you believe would be important for the program to pursue.

	Response Count
	1
answered question	**1**
skipped question	**0**

19. Do you have any other comments or suggestions for improving the program?

	Response Count
	0
answered question	**0**
skipped question	**1**

Page 2, Q1. Please rate your level of satisfaction with each of the following as related to this program. (Skip any item that is not applicable to you.)

1	We do not get together enough to discuss how our various courses complement each other.	Dec 30, 2010 6:02 PM

Page 3, Q1. Please rate your level of satisfaction with each of the following as related to this program. (Skip any item that is not applicable to you.)

1	When Dr. McGowan left we lost a lot of support for the program. We need to make more inroads into area process facilities so we can supply students with employment opportunities.	Dec 30, 2010 6:04 PM

Page 13, Q1. Are there other courses in this program that you would like Coastline to offer?

1	I would like to develop a course in green technology.	Dec 30, 2010 6:13 PM

Page 13, Q2. As part of this review, the program will be identifying new five-year goals for the program. Please suggest one or more goals that you believe would be important for the program to pursue.

1	1. Equipment and Simulation Lab 2. Expand internship program. 3. Develop course on Green Technology 4. Re-establish Guidance Committee	Dec 30, 2010 6:13 PM