

PROCESS TECHNOLOGY (PTEC)

PTEC C110 3 Units (54 lecture hours)

Introduction to Process Technology

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

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. Graded or Pass/No Pass option.

PTEC C111 3 Units (54 lecture hours)

Health, Safety, and Environment

Advisory: PTEC C110.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

This course will introduce various types of plant hazards, safety and environmental systems, equipment, and regulations. Graded or Pass/No Pass option.

PTEC C112 1.5 Units (27 lecture hours)

Quality Management

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

This course will introduce many process industry-related quality concepts, including operating consistency, continuous improvement, plant economics, team skills, and statistical process control (SPC). Graded or Pass/No Pass option.

PTEC C113 3 Units (54 lecture hours)

Process Technology 1: Equipment

Advisory: PTEC C110.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

This course provides an introduction into the field of equipment within the process industry including industry-related equipment components, operation, and troubleshooting. Graded or Pass/No Pass option.

PTEC C114 3 Units (54 lecture hours)

Process Technology 2: Systems

Advisory: PTEC C113.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

The purpose of this course is to study the interrelation of process equipment and process systems as they are used in normal conditions. Graded or Pass/No Pass option.

PTEC C115 3 Units (54 lecture hours)

Process Technology 3: Operations

Advisory: PTEC C114.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

This course covers concepts related to commission, normal startup, normal operations, normal shutdown, turnarounds, and abnormal situations within an operating unit. Graded or Pass/No Pass option.

PTEC C116 3 Units (54 lecture hours)

Instrumentation 1

Advisory: PTEC C115.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

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. Graded or Pass/No Pass option.

PTEC C117 3 Units (54 lecture hours)

Instrumentation 2

Advisory: PTEC C116.

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

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. Graded or Pass/No Pass option.

PTEC C120 2 Units (36 lecture hours)

OSHA Standards for Construction Industry

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

This course covers Federal OSHA policies, procedures, and standards, as well as construction safety and health principles. Topics include scope and application of the OSHA construction standards. Special emphasis is placed on those areas that are the most hazardous, using OSHA standards as a guide. Learn to apply the appropriate Federal OSHA standard that applies to hazards in the construction industry (#510). Graded or Pass/No Pass option.

PTEC C121 2 Units (36 lecture hours)

OSHA Guide to Industrial Hygiene

Grading Mode: Standard Letter, Pass/No Pass

Transfer Credit: CSU.

This course covers industrial hygiene practices and related OSHA regulations and procedures. Course topics include recognition, evaluation, and control of chemical, physical, biological and ergonomic hazards, Permissible Exposure Limits (PEL), OSHA health standards, respiratory protection, engineering controls, OSHA sampling protocols and strategies, and workplace health program elements (#521). Graded or Pass/No Pass option.

PTEC C122 **2 Units (36 lecture hours)**
OSHA Electrical Standards
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

This course covers OSHA Electrical Standards and the hazards associated with electrical installations and equipment. Course topics include single- and three-phase systems, cord- and plug-connected and fixed equipment, grounding, ground fault circuit interrupters, and safety-related work practices. Emphasis is placed on electrical hazard recognition and OSHA Standards, policies, and procedures and applicable portions of the National Electrical Code (NEC). Students will participate in workshops on the safe and correct use of electrical testing equipment (#3095). Graded or Pass/No Pass option.

PTEC C123 **2 Units (36 lecture hours)**
OSHA Fall Protection
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

This course covers OSHA Fall Protection Standards for construction and an overview of fall protection methods. Course topics include principles of fall protection, components and limitations of fall arrest systems, and OSHA Standards and policies regarding fall protection. Students will participate in activities demonstrating the inspection and use of fall protection equipment, residential construction fall protection, training requirements, and development of a fall protection program (#3115/3110). Graded or Pass/No Pass option.

PTEC C124 **2 Units (36 lecture hours)**
OSHA Excavation, Trenching, and Soil Mechanics
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

This course covers OSHA Excavation Standards and safety and health aspects of excavation and trenching. Course topics include practical soil mechanics and its relationship to the stability of shored and unshored slopes and walls of excavations, introduction of various types of shoring (wood timbers and hydraulic), soil classification, and use of protective systems. Testing methods are demonstrated, and students participate in activities in the use of instruments such as penetrometers, torvane shears, and engineering rods (#3015/3010). Graded or Pass/No Pass option.

PTEC C125 **2 Units (36 lecture hours)**
OSHA Electrical Safety and Lockout/Tagout for Construction
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

This course covers the role and responsibility of the employer to develop and implement an energy-control program or lock-out/tag-out (LOTO) for the protection of workers while performing servicing and maintenance activities on machinery and equipment. Topics include explaining types of hazardous energy, detecting hazardous conditions, implementing control measures as they relate to the control of hazardous energy, developing and implementing energy control programs including written isolation procedures, training of authorized and affected employees, and periodically inspecting energy control procedures using the OSHA Control of Hazardous Energy Standard (#7115). Graded or Pass/No Pass option.

PTEC C126 **2 Units (36 lecture hours)**
OSHA Principles of Ergonomics
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

This course covers the use of ergonomic principles to recognize, evaluate, and control workplace conditions that cause or contribute to musculoskeletal and nerve disorders. Course topics include work physiology; anthropometry; musculoskeletal disorders; use of video display terminals; and risk factors such as vibration, temperature, material handling, repetition, and lifting and patient transfers in health care. Course emphasis is on industrial case studies covering analysis and design of workstations and equipment activities in manual lifting and coverage of current OSHA compliance policies and guidelines (#2255/2250). Graded or Pass/No Pass option.

PTEC C127 **2 Units (36 lecture hours)**
OSHA Hazardous Materials
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

This course covers OSHA General Industry Standards and other consensus and proprietary standards that relate to the use of hazardous materials. Course topics include flammable and combustible liquids, compressed gases, LP gases, and cryogenic liquids. Related processes such as spraying and dipping and using electrical equipment in hazardous locations are also discussed (#2015).

PTEC C128 **2 Units (36 lecture hours)**
OSHA Respiratory Protection
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

This course covers the requirements for establishing, maintaining, and monitoring a respiratory protection program. Course topics include terminology, OSHA Respiratory Protection Standards, NIOSH certification, respiratory protection programs, and medical evaluation requirements. Program highlights include activities on respirator selection, qualitative and quantitative fit testing, and the use of respiratory protection and support equipment (#2225). Graded or Pass/No Pass option.

PTEC C130 **2 Units (36 lecture hours)**
OSHA Standards - General Industry
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

This course covers OSHA Standards, policies, and procedures in general industry. Topics include scope and application of the OSHA General Industry Standards and general industry principles with special emphasis on those areas in general industry that are most hazardous (#511). Graded or Pass/No Pass option.

PTEC C132 2 Units (36 lecture hours)

OSHA Permit-Required Confined Space Entry
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

This course covers the safety and health hazards associated with permit-required confined space entry. Course topics include recognition of confined space hazards, identification of permit and non-permit required confined spaces, use of instrumentation to evaluate atmospheric hazards, ventilation techniques, development and implementation of a confined space program, proper signage, and training requirements. This course features activities on permit entry classification, instrumentation, and program development (#2264). Graded or Pass/No Pass option.

PTEC C134 2 Units (36 lecture hours)

OSHA Machinery and Machine Guarding Standards
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

This course covers the various types of common machinery, machine safeguards, and related OSHA regulations and procedures. Guidance is provided on the hazards associated with various types of machinery and the determination of proper machine safeguards. Course topics include machinery processes, mechanical motions, points of operation, control of hazardous energy sources (lockout/tagout), guarding of portable powered tools, and common OSHA machine guarding violations. Program highlights include the ability to recognize hazards and provide options for control and hazard abatement through machine safeguarding inspection activities (#2045). Graded or Pass/No Pass option.

PTEC C281 1 Unit (90 other hours)**Work Based Learning**

Prerequisite(s): Be employed or volunteer in a field related to Process Technology for 5 hours per 1 unit of Work Based Learning.
Co-requisite(s): Be enrolled in a total of 7 units including Work Based Learning.
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

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. Graded or Pass/No Pass option.

PTEC C282 2 Units (180 other hours)**Work Based Learning**

Prerequisite(s): Be employed or volunteer in a field related to Process Technology for 5 hours per 1 unit of Work Based Learning.
Co-requisite(s): Be enrolled in a total of 7 units including Work Based Learning.
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

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. Graded or Pass/No Pass option.

PTEC C283 3 Units (270 other hours)**Work Based Learning**

Prerequisite(s): Be employed or volunteer in a field related to Process Technology for 5 hours per 1 unit of Work Based Learning.
Co-requisite(s): Be enrolled in a total of 7 units including Work Based Learning.
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

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. Graded or Pass/No Pass option.

PTEC C284 4 Units (360 other hours)**Work Based Learning**

Prerequisite(s): Be employed or volunteer in a field related to Process Technology for 5 hours per 1 unit of Work Based Learning.
Co-requisite(s): Be enrolled in a total of 7 units including Work Based Learning.
Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

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. Graded or Pass/No Pass option.