

## Common Course Numbering System

Your current Institution is CCCS

### Searching Current Courses For Summer 2015

**Course:** PRO 125  
**Title:** Industrial Equipment  
**Long Title:**

**Course Description:** Familiarize the student with nomenclature, maintenance, safety and operations in relation to the stationary equipment utilized in the oil and gas and other process industries. This course provides an overview or introduction into the field of equipment and maintenance within the process industry. The course will introduce the roles and responsibilities of process technicians, the environment in which they work, and the equipment and systems in which they operate. The course also provides an overview or introduction into the field of stationary equipment utilized in many of the process industries. This course will introduce many process industry-related equipment concepts including purpose, components, operation, and the Process Technician's role for operating and troubleshooting the equipment.

**Min Credit:** 4

**Max Credit:**

**Course Notes:** Entered new course 1/29/08 s@  
**Origin Notes:** CMC  
**Status Notes:** Revisions entered 9/15/11 LK

#### STANDARD COMPETENCIES:

1. List types of stationary equipment used in refining, petrochemical, mining and mineral processing, food processing and other process industries
2. Describe equipment operations and appropriate uses common to refining, petrochemical, mining and mineral processing, food processing and other process industries
3. Explain pressure and temperature limits of hoses and fittings
4. Discuss selection and sizing criteria as related to pressure, temperature, flow and corrosiveness of fluids
5. Describe the operating principles of Valves
6. Describe the operating principles of Tanks
7. Identify the common types/applications of stationary equipment
8. Describe the operating principles of stationary equipment
9. Describe the principles of transmission and lubrication
10. Identify typical procedures associated with transmission and lubrication
11. Identify typical problems associated with transmission and lubrication
12. Identify the common types and applications of heat exchangers
13. Describe the operating principles of heat exchangers
14. Identify typical problems associated with heat exchangers

15. Identify the common types of cooling towers
16. Describe the operating principles of cooling towers
17. Identify typical problems associated with cooling towers
18. Identify the common types and applications of furnaces
19. Identify typical problems associated with furnaces
20. Identify the common types and applications of boilers
21. Identify typical procedures associated with furnaces and boilers
22. Identify typical problems associated with boilers
23. Describe the purpose of filters and dryers in the process industry
24. Describe the operating principles of filters and dryers
25. Identify typical procedures associated with filters and dryers
26. Identify typical problems associated filters and dryers
27. Recall the common types and applications of vessels
28. Identify typical procedures associated with vessel operation and maintenance
29. Identify typical problems associated with vessels
30. Explain the purpose of diagrams including why, when and where they are used
31. Identify components on a typical PFD and Piping and Instrumentation Diagram (P&ID)

TOPICAL OUTLINE:

- I. Valves
  - a. Common valve types
  - b. Safety and environmental concerns associated with valves
- II. Power Transmission and Lubrication
  - a. Purpose of major transmission components
  - b. Types of bearings
  - c. Safety and environmental hazards
- III. Piping and Valves
  - a. Materials used to manufacture piping and valves
  - b. Types of piping and valves
  - c. Monitoring and maintenance activities
- IV. Mining Industry Stationary Equipment Overview
  - a. Basic Mineral Processing Equipment
  - b. Overview of the Mining Industry
  - c. Growth and Development
  - d. Duties, Responsibilities and Expectations of the Technician

- e. Changes and Future Trends in the Industries
- V. Distillation
  - a. Chemical properties when performing distillation
  - b. Types of distillation units
  - c. The distillation process
  - d. Monitoring and maintenance activities
- VI. Process Control Instrumentation
  - a. Major types of process control instrumentation
  - b. Variables controlled by instrumentation
  - c. Applications and functions with Stationary Equipment
  - d. Monitoring and maintenance activities
- VII. Process Utilities
  - a. Different types of process utilities
  - b. Equipment associated with utility systems
- VIII. Process Auxiliaries
  - a. Purpose and functions
  - b. Parts associated with different auxiliary systems
- IX. Process Print Reading
  - a. System drawings
  - b. Drawing types
  - c. Symbols used in drawing

RELEASE: 8.5.3

© 2015 Ellucian Company L.P. and its affiliates.