



SYLLABUS

CATALOG DESCRIPTION: THIS COURSE IS A GENERAL OVERVIEW OF SAFETY, HEALTH, AND ENVIRONMENTAL CONCEPTS FOR THE PROCESS INDUSTRY. THE CONTENTS RANGE FROM THE TECHNICIANS ROLE, ACCIDENTS IN THE WORKPLACE TO HAZARD RECOGNITION, ENGINEERING CONTROL OF HAZARDS AND PROCESS HAZARDS (PRESSURE, STEAM, LIGHT ENDS, WATER AND ELECTRICAL FIRES), AND PROCESS SAMPLING AND TESTING.

Prerequisites:
None

Semester Offered: All

Common Student Learning Outcomes

Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...

BROAD AND SPECIALIZED LEARNING

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

CRITICAL THINKING

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

CULTURAL AND CIVIC ENGAGEMENT

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

EFFECTIVE COMMUNICATION

Students will exchange ideas and information with clarity in multiple contexts.

INTEGRATING TECHNOLOGIES

Students will demonstrate fluency in the application and use of technologies, information, or resources in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Assessment website (www.sanjuancollege.edu/assessment).

Course Learning Outcomes

Upon successful completion of the course, the student will be able to...

1. Identify the various agents that can present potential safety and health hazards in the Process Industry, including process fluids, pressurized equipment, physical agents, and air contaminants.
2. Identify specific categories of hazardous chemicals used in the Process Industry and the potential safety and health hazards posed by these chemicals.
3. Explain the various routes of entry, hazardous chemicals can enter the human body.
4. Describe the short-term and long-term impact specific hazards have on individual health and safety, as well as the environment.

5. Identify the various factors, which can lead to leaks, spills, and releases and their potential dangers to worker safety and environmental protection.
6. Understand the behaviors that are critical to avoid personal injury, injury to others, or injury to the environment.
7. Recognize, identify and describe the various engineering controls; specifically alarm and indication systems, process containment and control systems, and process upset control systems used by the Process industry to eliminate and/or minimize threats to safety, health and the environment.
8. Describe and identify various administrative controls, in the way of specific company SH&E programs and activities, used by the Process Industry to eliminate and/or minimize threats to safety, health, and the environment.
9. Discuss the function and purpose of personal protection equipment, testing equipment, and permitting systems found in local plants.
10. Use MSDS to obtain key information regarding hazardous materials.
11. Employ labels and placards to identify the contents of process vessels, piping, and miscellaneous containers.
12. Apply various analysis techniques to identify potential unsafe workplace practices, and workplace hazards to help ensure the safety of the work environments.
13. Demonstrate the correct use of equipment and facilities used to prevent or contain various emergencies that may occur in the Process Industry.
14. Discuss the various federal, state and local regulations as well as industry standards that impact the Process Industry.
15. Be able to determine weights of various chemical reagents using triple beam balance and digital balance.