

CEE-PUBH 5670
Hazardous Chemicals Handling and Safety
Spring Semester 2020

Instructor: William J. Doucette

Office: UWRL 305, EL 170 Phone: 797-3178

e-mail: william.doucette@usu.edu

Lecture and Labs (EL 221): 3:30-5:20 PM (W)

Office hours: 2:30-3:30 PM (W) or by appt.

Course Goals and Objectives: This course is designed to provide students with the necessary skills & knowledge to work safely in areas associated with hazardous chemicals. Topics covered include: regulations, exposure routes, toxicology, chemical & physical hazards, personal protective equipment, sampling, monitoring, decontamination, & emergency response procedures. **Students achieving a passing grade for the class and attending all class meetings will also be awarded a HAZWOPER 40 hour (OSHA 1910.120) completion certificate.**

Prerequisites by Topic: general chemistry

| Topics | # of lectures (14) |
|--|---------------------------|
| Hazard Recognition | 1 |
| Regulatory overview (Legislation and regulations, Occupational safety and health program, medical surveillance program, OSHA's hazard communication standard) | 2 |
| Health and Safety Programs and Plans | 1 |
| Properties of Hazardous Materials (physical/chemical properties, fire and explosive hazards of chemicals, Manuals and chemical hazard coding systems) | 1 |
| Toxicology and Chemical Exposure (exposure routes, duration, frequency, limits) | 1 |
| Respiratory Protection (engineering controls, respiratory protection devices) | 1 |
| Air Sampling and Monitoring (sample collection methods, air monitoring instruments) | 1 |
| Personal Protective Clothing/Equipment (selection, donning/doffing, levels of protection) | 2 |
| Emergency response procedures (emergency response plan, site control, spill control, decontamination, field activities) | 1 |
| Special Operations (confined space entry procedures, material handling, shipping/transport) | 1 |
| Lab Exercises (Spill Response) | 2 |

Suggested text and readings:

Class notes and hand-outs

See OSHA link: <https://www.osha.gov/SLTC/emergencypreparedness/hazwoper/standards.html>

Grading:

| | |
|------------------------|------------|
| Quizzes | 70% |
| Homework/labs/projects | 15% |
| <u>Final Exam</u> | <u>15%</u> |

General grading guidelines: A = 100-90%, B = 89-80%, C = 79-70%, D = 69-60%

Late assignments receive only 50% of the graded point total.

Dates of interest: Last day of class (4/15). Final exam (4/29), (3:30-5:20 PM).