

Last updated: 9/99

San Bernardino Valley College
Course Outline for ENV 001
MANAGEMENT OF HAZARDOUS MATERIALS

I. CATALOG DESCRIPTION:

ENV 001: Management of Hazardous Materials

3 hours lecture per week = 3 units

Catalog Description: Entry level course providing a survey of regulations and laws governing the management of hazardous materials. Also covered will be definitions, safety requirements, storage, transportation, emergency response, Material Safety Data Sheets (MSDS) and personal protective equipment.

Schedule Description: Entry level course providing a survey of regulations and laws governing the management of hazardous materials.

Departmental Advisory: CHEM 101 or equivalent

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: One

III. EXPECTED OUTCOMES FOR STUDENTS:

Upon completion of the course, the student will be able to:

- A. Identify, research and apply the principles of the Federal, State and local laws and regulations to the management of hazardous materials in the working environment.
- B. Explain how regulations apply to specific instances.
- C. Set up and manage a hazardous material area.
- D. Determine the hazard of a particular chemical and explain how the material is to be stored and handled safely.
- E. Solve a specific problem involving a hazardous material and explain why a certain procedure was selected.

IV. CONTENTS:

- A. Introduction to Hazardous Materials
 1. What is a hazardous material?
 2. Term project explanation.
- B. Definitions
 1. Explanation of terms as they relate to hazardous materials management
 2. Authorized abbreviations
- C. Federal Laws and Regulations
 1. Overview of federal laws and regulations
 2. Who has the enforcement authority?
- D. State and Local Regulations
 1. Overview of California regulations and laws
 2. What agency enforces what laws?
- E. Management of Hazardous Materials
 1. Radioactive

- 2. Biological
- 3. Chemical
- F. Classes of Hazardous Materials
 - 1. Explosives
 - 2. Flammable and non-flammable gases
 - 3. Flammable liquids
 - 4. Flammable solids
 - 5. Oxidizers
 - 6. Toxic
 - 7. Radioactive
 - 8. Corrosives
 - 9. Miscellaneous
- G. Toxicology
 - 1. Effects of poisons in the human body
 - 2. Understanding the different classes of poisons
- H. Material Safety Data Sheets (MSDS)
 - 1. What does a MSDS cover?
 - 2. Reading a material safety data sheet
- I. Personal Protective Equipment (PPE)
 - 1. Types of PPE
 - 2. Determining the correct PPE to use
- J. Storage and Handling of Hazardous Materials
 - 1. Storage areas
 - 2. Compatibility of materials
 - 3. Identification
 - 4. Inspection requirements
 - 5. Spill containment
- K. Transportation of Hazardous Materials
 - 1. Packaging requirements
 - 2. Shipping papers
 - 3. Material identification
 - 4. Labeling
 - 5. Placarding
 - 6. Spill reporting procedures
- L. Emergency Response Management
 - 1. Emergency notification procedures
 - 2. Training requirements
 - 3. Federal and state requirements
- M. Hazardous Waste Management
 - 1. Federal and state regulations and laws
 - 2. Hazardous waste definition
 - 3. Types of hazardous wastes
 - 4. California restricted wastes
 - 5. Generators
 - 6. Treatment, Storage and Disposal (TSD) Facilities
 - 7. Transporters

V. METHODS OF INSTRUCTION:

- A. Reading
- B. Lecture

VI. TYPICAL ASSIGNMENTS:

- A. Read lessons and complete weekly homework assignments.
Typical Questions:
 - 1. What is the proper shipping name for a hazardous substance that is not a hazardous material?
 - 2. What Code of Federal Regulations covers the transportation of hazardous materials/wastes?
- B. Using a MSDS, determine the hazard of a particular chemical and explain the effects the material could have on the human body.
- C. Explain what agencies are responsible for the enforcement of each of the laws and regulations governing hazardous materials.
- D. Term Paper – Research and analysis of the storage, handling and packaging of several hazardous materials.
- E. Written Assignment – Student will be given a specific problem involving a hazardous material and will be required to solve the problem along with an explanation of why a certain procedure was selected.

VII. EVALUATION:

- A. Methods of Evaluation:
 - 1. Graded assignments
 - 2. Final exam/term projectTypical Questions:
 - a. How do you determine the packing group for a flammable liquid? Explain the requirements for each packing group.
 - b. Name all hazard classes and their assigned numbers including divisions.
- B. Frequency of Evaluations:
 - 1. Ten (10) exercises/quizzes
 - 2. Two (2) written assignments
 - 3. One (1) midterm
 - 4. One (1) final and term project

VIII. TYPICAL TEXTS:

Management of Hazardous Materials. Text is being written by course originator. Text will be easily amended to provide students with changes that occur during the course of instruction. 1999

Emergency Response Guide. Department of Transportation (Can be used for other courses in Environmental Science.) 1998

Griffin, Roger D. Principles of Hazardous Materials Management. Lewis Publishers, 1998.

IX. OTHER SUPPLIES REQUIRED OF STUDENTS:

Conversion chart for Celsius and Fahrenheit temperatures.