

# NEW/MODIFIED/ACTIVATED/INACTIVATED COURSE

Division: **School of Technology & Human Services**

Date **3/15/99**

Course Designator: **EHMT 130**

Title: **Health Effects of Hazardous Materials**

Same as (other course(s) designator(s), \_\_\_\_\_ ,

Effective Catalog Year: **1999-2000**

Faculty Originator: **Robert Evangelista**

New Course [ ]

Course Classification Code: **I2**

Course Modification\* [✓]

SAM Classification Code: **C**

Inactivate Course [ ]

Activate Course [ ]

Requires Board Approval:

Units of Credit From: To: Prerequisite [ ] (attach change)

Lecture Hours From: To: Co-requisite [ ] (attach change)

Laboratory Hours From: To:

Degree Status From: To: Course Designator: [ ]

From:

To:

Board Approval Not Required:

Course Description [✓]

Title: [✓]

Grading Basis [ ]

From: **Health Effects of Hazardous Materials**

Recommended Preparation [ ]

To: **Introduction to Toxicants**

Other:

Rationale for Modification or Activation or Inactivation:

The word "hazardous" has a negative connotation that has been shown, by other community colleges, to influence parents to deter their children from being students in the environmental field. Community colleges are changing course titles to more benign names.

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**\*NOTE: Attach new or modified course outline for all course modifications.**

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*C. Mendahl*

Division Dean

*3/15/99*

Date

\_\_\_\_\_  
Vice President for Academic Affairs

\_\_\_\_\_  
Date

\_\_\_\_\_  
Academic Senate Vice President

\_\_\_\_\_  
Date

Instructional Office Use Only:

Approved by:

C & I Sub A

Date: \_\_\_\_\_

C&I Committee

Date: \_\_\_\_\_

Governing Board

Date: \_\_\_\_\_

Catalog Number

Date: \_\_\_\_\_

## SOUTHWESTERN COLLEGE COURSE OUTLINE

Division: **School of Technology &  
Human Services**

Origination Date: 11/90

Modification Date: **9/98, 3/99**

Effective Date: **Fall 1999**

Course Designator

and Number	Title	Units	Lec	Lab.
EHMT 130	<del>Health Effects of Hazardous Materials</del> <b>Introduction to Toxicants</b>	3		3

Same as (other course(s) designator(s), ,

Grading Basis: Grading Scale; Credit/No Credit option available

Prerequisite:

Co-requisite:

Recommended Preparation: Biology 190

Course Description & Scope: (50 words or less)

Acute and chronic health effects produced by exposure to chemical, physical, and biological agents ~~Emphasis on hazardous materials associated with risk assessments,~~ **associated with** industrial operations, waste disposal, and remedial sites. Topics include routes of entry, risk management, permissible exposure limits, medical surveillance, control methods, understanding ~~MSDSs~~ **Material Safety Data Sheets**, epidemiology, industrial hygiene, and occupational health and safety. [CSU]

Measurable Course Objectives and Minimum Standards, as Determined by Standards set by the instructor, at 70% Proficiency for a Grade of "C":

1. Student will, through a written assignment and exam, evaluate the need for safety equipment, decide what types of equipment are needed, and explain the proper use of that safety equipment.
2. Student will, through a written assignment and exam, assist in the development of compliance plans and programs.
3. Student will, through a written exam, evaluate the compliance of a situation with existing regulations.

- 4. Student will, through a written exam, explain how to obtain current material safety data sheets.
- 5. Student will, through a written exam, interpret and explain the use of information found on a MSDS.
- 6. Student will, through a written exam, read and interpret articles in current publications in the field of health effects.

Core Content to be Covered in all Sections:

- 1. Approximate 11 % of course  
 Chemical hazards: solids, liquids, gases, vapors, dusts, fumes, fibers, mists  
 Physical hazards: noise, temperature extremes, ionizing radiation non-ionizing radiation  
 Biological hazards: bacteria, viruses
- 2. Approximate 11 % of course  
 Exposure and entry routes  
 A. Local versus systemic effects  
 B. Ingestion  
 C. Skin contact: Types of skin diseases, systemic absorption  
 D. Inhalation: Respiratory hazards, types of airborne contaminants
- 3. Approximate 11 % of course  
 Routes of chemical absorption, distribution and elimination  
 A. Distribution  
 B. Metabolism  
 C. Excretion
- 4. Approximate 11 % of course  
 Dose response relation (dose of exposure)  
 A. Toxicity versus hazard  
 B. Biological variation in effect  
 C. Threshold concept: Threshold limit values, lethal doses, lethal concentration (airborne level)  
 D. Effects that may not exhibit thresholds: Cancer
- 5. Approximate 11 % of course  
 Duration of exposure  
 A. Acute effects  
 B. Sub-chronic effects  
 C. Chronic effects

6. Approximate 11 % of course  
Action of toxic substances  
A. Types of actions: Enzyme inhibitors, blocking agents (antagonists), physical effects  
B. Types of interactions: Synergism, potentiation  
C. Sensitizers
7. Approximate 11 % of course  
Effects of exposures to air contaminants  
A. Local effects: Irritants, necrosis, fibrosis, silicosis, asbestosis  
B. Systemic effects: Headache, nausea, narcosis  
C. Asphyxiants: Simple asphyxiants, chemical asphyxiants
8. Approximate 12 % of course  
Target organ effects  
A. Heart sensitization and toxicity  
B. Nervous system toxicity  
C. Liver toxicity  
D. Kidney toxicity  
E. Hemotoxicity  
F. Immunotoxicity  
G. Reproductive organ toxicity  
H. Fetal toxicity  
I. Mutagens and carcinogens
9. Approximate 11 % of course  
Regulations and standards  
A. OSHA/Cal-OSHA  
B. TOSCA (EPA)  
C. NIOSH standards

NOTE: For Specific Details, see Instructor's Syllabus.

Method of evaluation to determine if objectives have been met by students:  
(Check all that apply)

Exams:

Essay	<input checked="" type="checkbox"/>	Class Activity	<input type="checkbox"/>	Written Assignments	<input checked="" type="checkbox"/>
Problem Solving Exercise	<input type="checkbox"/>	Skill Demonstration	<input type="checkbox"/>	Lab Activity	<input type="checkbox"/>
Objective Test	<input checked="" type="checkbox"/>	Oral Assignments	<input type="checkbox"/>	Quizzes	<input type="checkbox"/>

Other

Instructional Methodology: (Check all that apply)

Lecture  Demonstration  Discussion

Audiovisual  Individual Assistance  Group Activity

Computer Assisted Instruction

Requires a minimum of three (3) hours of work per unit, including class time

Required and Major Optional Reading(s), Including Textbook(s) and Software: (Author-last name, first name. Title. Location: Publisher, Year)

**Ostler, Neal K., Byrne, Thomas E., and Malachowski, Michael J. Health Effects of Hazardous Materials. Prentice Hall, Volume 3, 1998 (or latest volume).**