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OAN Date:

**CUYAHOGA COMMUNITY COLLEGE  
OFFICIAL COURSE OUTLINE  
Mapped**

SUBJECT AREA TITLE

Environment Health Safety Technology

COURSE TITLE

Hazardous Materials Transportation

SUBJECT AREA CODE-COURSE NUMBER

EHST - 2341

COURSE CREDIT HOURS

2.00

**I. DESCRIPTION OF COURSE:**

- A. CATALOG DESCRIPTION: Detailed study of U.S. Department of Transportation (DOT) regulations as well as an introduction to international transportation organizations and their rules for air and vessel transportation. Students learn to interpret DOT regulations, recommend compliance strategies, and select packaging, labeling, documentation and placarding for selected hazardous materials.
- B. LECTURE HOURS: 2.00
- C. LAB HOURS: 0.00
- D. OTHER REQUIRED HOURS: 0.00
- E. PREREQUISITE(S):  
EHST - 1310 Introduction to Environmental Law

**II. ESSENTIAL LEARNING OUTCOMES:**

Upon satisfactory completion of EHST 2341 - Hazardous Materials Transportation, the student should be able to perform the following outcomes and supporting objectives:

**Outcome: A. Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.**

Supporting Outcomes:

1. Comprehend and use the U.S. D.O.T./P.H.M.S.A. regulations pertaining to the transportation of hazardous materials.
2. Utilize international hazardous materials (dangerous goods) requirements, and identify the similarities/differences in the national/international requirements.

### III. OUTCOMES/OBJECTIVES:

Upon satisfactory completion of EHST 2341 - Hazardous Materials Transportation, the student should be able to perform the following outcomes and supporting objectives:

#### **Outcome: A. Comprehend and use the U.S. D.O.T./P.H.M.S.A. regulations pertaining to the transportation of hazardous materials.**

Supporting Objectives:

1. Locate a hazardous material on the Hazardous Materials Table – 49CFR172.101
2. Determine proper shipping name/description/hazard class
3. Select packaging requirements
4. Choose mode of transportation
5. Communicate the hazards of a material offered for transportation on packaging, transport vehicles, and shipping papers
6. Mark, label, and document a hazardous materials shipment
7. Locate loading/unloading, separation, and segregation requirements for the various modes, and identify security requirements for hazardous materials shipments.
8. Understand hazardous materials transportation emergency response procedures, including how to: - Locate and understand emergency response information/protocols in the Emergency Response Guidebook using container/vehicle shapes, colors, identification numbers, and names, and -List information to be reported during initial response to a hazardous materials incident.

#### **Outcome: B. Utilize international hazardous materials (dangerous goods) requirements, and identify the similarities/differences in the national/international requirements.**

Supporting Objectives:

9. Utilize international hazardous materials (dangerous goods) requirements, and identify the similarities/differences in the national/international requirements.

#### IV. COURSE CONTENT:

1. Overview of hazardous materials transportation regulation
  - a. Hazardous materials accidents and the need for regulation
  - b. The U.S. Department of Transportation and international organizations regulating hazardous materials
  - c. Introduction to the Department of Transportation regulations
  - d. Training requirements for HazMat employees
  - e. Security plan requirements for shippers and transporters
2. Preparing hazardous materials for shipment
  - . Physical & chemical properties of hazardous materials
    - a. Hazard class
    - b. The Hazardous Materials Table
    - c. Proper shipping names
    - d. Marking and labeling
    - e. Packaging
3. Shipping hazardous materials
  - . Placarding
    - a. Shipping papers and other required paperwork
    - b. Loading/unloading
    - c. Separation and segregation
    - d. Emergency reporting and emergency response
4. Releases and other emergencies
  - . North American Emergency Response Guidebook
    - a. Reporting
    - b. Initial response

- c. Technical assistance
- 5. Hazardous materials transporter requirements
  - . Motor carriers
  - a. Rail carriers
  - b. Water carriers
  - c. Air carriers
- 6. International hazardous materials transportation
  - . Air
  - a. Vessel

**V. METHODS OF STUDENT EVALUATION MAY INCLUDE ANY OF THE FOLLOWING:**

- 0. Oral presentation about assigned work
- 1. Written Assignments
- 2. Quizzes
- 3. Tests on major units
- 4. Projects
- 5. Class participation

**VI. RESOURCES MAY INCLUDE ANY OF THE FOLLOWING:**

. DeLisi, Steven . *Hazardous Materials Incidents: Surviving the Initial Response*. As Revised Tulsa:PennWell Corporation,

**VII. ADDITIONAL RESOURCES:**

- A. Office of the Federal Register. *Code of Federal Regulations, Title 49, Parts 100-185*. <http://ecfr.gpoaccess.gov>, 2006 or as revised.
- B. U.S. Department of Transportation, Pipeline and Hazardous Materials Administration. *Office of Hazardous Materials Web page*. <http://hazmat.dot.gov>, 2006 or as revised.