

Effective: Fall 2006

## **COURSE INFORMATION**

COURSE PREFIX/NUMBER: **EVT 254**  
COURSE TITLE: **Industrial Safety and Emergency Response**  
LECTURE HOURS PER WEEK: 3.0  
CREDIT HOURS PER SEMESTER: 3.0

[DL ATTENDANCE/VA STATEMENT](#)  
[TEXTBOOK INFORMATION](#)

## **COURSE DESCRIPTION**

This course covers state and federal regulations related to worker safety, industrial hygiene, and response to emergency situations. Emphasis is placed on response to releases of hazardous materials.

## **COURSE COMPETENCIES/PERFORMANCE OBJECTIVES**

EVT 254 provides the classroom and performance-based training for the 40-hour HAZWOPER certification. EVT 254 does not include the 24 hours of on-the-job training required at initial entry onto a waste site.

In this course the student will be provided the necessary environmental health and safety training required for a **40 Hour HAZWOPER Certificate of Completion** that will permit the student to go to work at any site requiring HAZWOPER training.

Content for the academic portion of the course will be provided through text, manuals, web sites, assignments and exercises. Students will also be required to participate in hands-on training in the proper use of personal protective equipment, site control, safe work practices, and the use of engineering controls an employee can use to help the employer reduce waste site hazards.

Upon successful completion of this course, students will be able to meet the following objectives:

### Module 1: Regulations Overview

- Demonstrate an understanding of the need for OSHA regulations and understand related HAZWOPER requirements.

### Module 2: Site Characterization

- Describe work site characterization.
- Plan a site safety and control program.

Module 3: Hazard Recognition

- Recognize work site hazards.

Module 4: Toxicology

- Demonstrate an understanding of the principles of toxicology.

Module 5: Chemical Awareness

- Categorize the characteristics and hazards associated with chemicals.

Module 6: Respiratory Protection

- Recognize the purpose, importance and limitations of respiratory protection programs.

Module 7: Personal Protective Equipment (PPE)

- Recognize the purpose, importance and limitations of personal protective equipment.
- Identify various types of protective equipment for face, head, foot and hand protection.

Module 8: Decontamination

- Perform decontamination procedures.

Module 9: Medical Surveillance

- Explain the importance and provisions of a medical surveillance program.

Module 10: Air Monitoring and Personal Sampling

- Recognize the value of direct reading instruments and the potential hazards from air monitoring.
- Describe various personal sample collection methods.

Module 11: Radiological Hazards

- Be able to monitor waste site radiological hazards.

Module 12: Material Sampling

- Explain the need and value of a detailed plan for material sampling.

Module 13: Emergency Procedures

- Itemize the various considerations in an emergency situation.

Module 14: Safe Work Practices

- Describe concerns and need for proper training on safe work practices.

Module 15: Confined Space

- Recognize the hazards and procedures involved in entering a confined space.

Module 16: Excavation

- Recognize the issues and hazards related to trenching and site excavations.

Module 17: Application of Hazardous Response Procedures and Use of PPE

- Display dependability, teamwork and safe work practices during hands-on training.
- Demonstrate decontamination purposes and principles.
- Demonstrate capability in the proper procedures for the use of PPE during hands-on training.

## **MINIMAL STANDARDS**

Minimal standards of performance for receiving three hours of semester credit from York Technical College are indicated by achieving a 60 percent accuracy level on all evaluation instruments used in the course performance evaluation strategy. Students must also

satisfactorily complete at least 80 percent of their course assignments and successfully participate in the 16 hours of hands-on training.

**For OSHA 40-hour HAZWOPER certification**, students must have at least an **80 percent mean score** on the combined score from the module quizzes and the final examination.

## **COURSE REQUIREMENTS**

### **Attendance Policy**

Students are responsible for attending meetings in the course until they have completed all course requirements. Students are responsible for all material covered and for all assignments made in all classes. Students who are absent from a course more than 20 percent of the total contact hours assigned will be withdrawn in accordance with the attendance policy of York Technical College. See attached Instructor's Individual Policy for more information.

### **Withdrawal from the Course**

A student may withdraw from a course after the drop/add period by notifying the instructor or division office of intent to withdraw. If the withdrawal is initiated by midterm, the student will receive a grade of "W". Withdrawals after midterm may result in either a grade of "W" or "WF" depending upon the student's academic performance and attendance in the course at the time of the withdrawal.

### **Student Conduct**

Students are expected to conform to all standards of conduct as specified in the York Technical College Handbook and Catalog. Students found guilty of academic dishonesty such as cheating or plagiarism will be given a grade of zero and may be subject to further disciplinary action.

## **EVALUATION STRATEGIES/GRADING**

Grades will be determined as described below:

Modules 1-16 Quizzes	50% of course grade	(3.125% each)
Module 17 Exercise	25% of course grade	
Final Exam	25% of course grade	
	100%	

The grading scale for three hours of semester credit is as follows:

A	90-100
B	80-89
C	70-79
D	60-69
F	Below 60

**Note: To acquire the OSHA 40-hour HAZWOPER certification**, students must have at least an **80 percent mean score** on the combined score from the module quizzes and the final examination. Students must also satisfactorily complete at least 80 percent of their course assignments and successfully participate in the 12 hours of hands-on training.

A statement of your instructor's additional requirements and/or policy will be provided.

Entry Level Skills: NONE

**Prerequisites:** NONE

**Co-Requisites:** NONE

### **TOPIC/CONTENT OUTLINE**

The following content and activities will be included:

#### **Module 1: Regulations Overview**

- Employee Rights and Responsibilities
- Provisions of 29 CFR 1910.120
- CFR Exercise
- OSHA and EPA Standards
- OSHA and EPA Standards Exercise
- Safety and Health Program
- Health and Safety Plan (HASP)
- Training Requirements
- Hazard Violation Exercise

#### **Module 2: Site Characterization**

- Purpose and Function of Site Characterization
- Three Phases in Site Characterization
- Key Procedures
- Site Preparation
- Site Work Zones
- Area Delineation Exercise

#### **Module 3: Hazard Recognition**

- Hazard Recognition Terminology
- Hazard Recognition
- Hazards at a Waste Site
- Measures to Prevent Injury
- Hazard Assessment Exercise

#### **Module 4: Toxicology**

- Human Response to Toxic Chemicals
- Health Hazards
- Routes of Entry
- Acute and Chronic Response
- Dose/Response Exercise
- Chemical Interactions
- Exposure Limits
- Protection Against Toxins
- Toxicology Exercise

#### **Module 5: Chemical Awareness**

- Acids and Bases
- Basic Treatment for Exposure
- MSDS Exercise
- Corrosives
- Exposure to PCBs
- Flammable Solvents
- Flammable Ranges
- Solvent Exposure
- Chemical Incompatibility
- Chemical Worksheet Exercise

- Water Reactive Metals
- Chemical Terminology
- Physical and Health Hazards Exercise

#### Module 6: Respiratory Protection

- Respirator Program
- Respirators
- Air-Purifying Masks
- Categories of Respirators
- Limitations of Respirators
- Poor Respirator Fit
- Respiratory Protection Exercise

#### Module 7: Personal Protective Equipment (PPE)

- Effects of Wearing PPE
- PPE Program
- PPE Terminology
- Limitations of PPE
- PPE Protection Against Toxins
- PPE Levels
- PPE Inspection Program
- Heat Stress
- Eye and Face Hazards
- Head Protection
- Hand Protection
- PPE Exercise

#### Module 8: Decontamination

- Standard Operating Procedures
- Decontamination Methods
- Decontamination Procedures
- PPE Rule for Decontamination
- Six-Step Decon Line
- Emergency Decontamination
- Medical Emergencies
- Decontamination Procedures Exercise

#### Module 9: Medical Surveillance

- Medical Surveillance Program
- Information Provided to the Physician
- Occupational History Reports
- Workers' Rights
- OSHA Standard
- Medical Surveillance Program Components
- Medical Surveillance Exercise

#### Module 10: Air Monitoring and Personal Sampling

- Air Monitoring Instruments
- Air Monitoring Terminology
- Direct-Reading Instruments
- Toxic Atmosphere Monitors
- Active Sampling Components
- Passive Sampling
- Radiation Dosimeters
- Personal Sampling Plan
- Benzene Colorimetric Tube Exercise

#### Module 11: Radiological Hazards

- Types of Radiation
- Effects of Radiation Exposure
- Radioactive Contaminants
- Protection from Radioactive Sources
- Radiation Exercise

#### Module 12: Material Sampling

- Sampling Plan Components
- Informational Components
- Documenting Chain of Custody
- Types of Samples
- Sampling Plan Exercise

#### Module 13: Emergency Procedures

- Emergency Response Plan
- Basic Training Programs
- Site Control Log
- Evacuation Routes
- Rescue/Response Action
- Spill Response Priorities
- Emergency Procedures Exercise

#### Module 14: Safe Work Practices

- Standing Orders
- Potential Hazardous Situations
- Handling Drums
- Hazards Related to Drums
- Procedures to Minimize Hazards
- Bulking and Staging
- Transporting Regulations
- Emergency Response Guidebook Exercise

#### Module 15: Confined Space

- Confined Space Terminology
- Entering a Confined Space
- Types of Rescue
- Health and Safety Hazards
- Confined Space Exercise

#### Module 16: Excavation

- Before You Excavate
- Cave-ins
- Excavation Hazards
- Access and Egress
- Excavation Exercise

#### Module 17: Application of Hazardous Response Procedures and Use of PPE

- SELF-CONTAINED BREATHING APPARATUS (SCBA) through pre-use inspection, donning, use, doffing and post-use cleaning and storage of the unit.
- PERSONAL PROTECTIVE EQUIPMENT LEVEL D through pre-use inspection, donning, use, doffing and post-use cleaning and storage of the equipment.
- a BASIC SIX-STEP DECONTAMINATION LINE through set-up, use, and post-use cleaning and storage of the equipment.

- AIR-PURIFYING RESPIRATORS (APR) through pre-use inspection, cartridge selection, donning, use, doffing and post-use cleaning and storage of the unit.
- PERSONAL PROTECTIVE EQUIPMENT LEVEL C through pre-use inspection, donning, use, doffing and post-use cleaning and storage of the equipment.
- PERSONAL PROTECTIVE EQUIPMENT LEVEL B through pre-use inspection, donning, use, doffing and post-use cleaning and storage of the equipment.
- BARREL COLIWASA to take a liquid sample from a drum.
- pH PAPER to indicate the pH of a liquid sample.
- a COMBUSTIBLE GAS INDICATOR and an OXYGEN MONITOR through set-up, calibration, use, and post-use cleaning and storage of the monitor.
- a DETECTOR TUBE PUMP and DETECTOR TUBE to determine the concentration of a hazardous gas.
- an OVERPACK DRUM to contain a damaged 55-gallon drum.
- PERSONAL PROTECTIVE EQUIPMENT LEVEL A through pre-use inspection, donning, use, doffing and post-use cleaning and storage of the equipment.