ATPT-1806: SPECIAL TOPICS IN PAINTERS AND LEAD ABATEMENT

Cuyahoga Community College

Viewing: ATPT-1806 : Special Topics in Painters and Lead Abatement

Board of Trustees:
JUNE 2026

Academic Term:
Fall 2026

Subject Code
ATPT - Appld Indus Tech - Painting

Course Number:
1806

Title:
Special Topics in Painters and Lead Abatement

Catalog Description:
Certification course covering the health hazards of working with lead and other toxic materials. In addition, controls for worker and environmental protection and safe work practices are covered.

Credit Hour(s):
2

Lecture Hour(s):
2

Requisites

Prerequisite and Corequisite
Departmental approval: admission to apprenticeship program.

Outcomes

Course Outcome(s):
Identify the sources of lead paint and the relative risks posed by industrial painting activities, and the legal aspects of lead abatement.

Objective(s):
1. List the sources of lead and other toxic metals found on job sites.
2. Define the terms used in lead paint abatement.
3. Identify the hazardous metals and materials in coatings.
4. Discuss legal concerns, including statutory and common law, with respect to lead exposure.
5. Differentiate between contractor, consultant, and owner liability.
6. Explain contract law and the respective benefits and obligations.
7. Discuss torts, tort actions, and liabilities.
8. Identify various worker protection regulations of concern.

Course Outcome(s):
Recognize the health hazards of lead paint and toxic coatings in the workplace and environment.

Objective(s):
1. Describe the routes of entry of lead into the body.
2. Define the major health effects of lead on adults and children.

3. Differentiate between inhalation and ingestion.
4. Discuss how lead is stored within the body and how acute and chronic exposure affects health.
5. Explain how kidneys remove lead and discuss the potential damage.

Course Outcome(s):

Discuss the safety controls required for the protection of workers, the general public, and the environment.

Objective(s):

1. Describe the application of major Federal statutes governing air, soil, water/sediment, and dust with respect to industrial painting.
2. List the sample collection sites used to obtain data with respect to the environmental and biological impact and lead abatement.
3. Describe how waste collection on-site is documented and managed.
4. Describe the requirements for the transport of hazardous waste and the restrictions imposed.
5. Explain how lead waste is stabilized.
6. Discuss the technologies involved in the recycling of lead waste.

Course Outcome(s):

Demonstrate the ability to work safely on lead abatement projects.

Objective(s):

1. Implement controls to reduce lead exposure from identified potential sources.
2. Define worker exposure and environmental risk with respect to lead coating disturbance.
3. Identify the presence of lead-containing coatings and jobsite health issues.
4. Develop plans to facilitate the control of lead hazards and integrate them into compliance.
5. Maintain air, blood, and exposure monitoring throughout the abatement process and implement a worker protection plan.

Methods of Evaluation:

1. Attendance
2. Participation
3. Assignments
4. Exams/quizzes

Course Content Outline:

1. Sources and legal aspects
    a. Sources
        i. Solder
        ii. Paint
        iii. Food containers
        iv. Toxic metals
            1. Cadmium
            2. Beryllium
            3. Chromium
    b. Terminology
        i. Toxic metal
        ii. Abatement
        iii. PEL
        iv. Statutory Law
        v. Biological monitoring
        vi. Ambien air
        vii. Compliance plans
        viii. Respiratory protection
        ix. Inhalation
        x. Ingestion
    c. Coatings

i. Hazardous metals
1. Lead
2. Lead dust
ii. Materials
1. Zinc
2. Methyl ethyl ketone

d. Legal
i. Statutory
1. Environmental Protection Agency (EPA)
2. Occupational Safety and Health Administration (OSHA)
3. Criminal
ii. Common Law
1. Torts
2. Contracts
3. Civil wrong

e. Liability
i. Contractual
1. Compliance
2. Performance
3. Worker safety
4. Environmental
ii. Consultant
1. Highest level
2. Quality assurance
iii. Owner
1. Design specifications
2. Environmental releases
3. Over site

f. Contract law
i. Benefits
ii. Obligations
1. Legal enforceable
2. Compliance specifications

g. Torts
i. Actions
1. Property damage
2. Illness
3. Injury
ii. Liabilities duty
1. Breach of Duty
2. Resultant harm

h. Worker protection regulations
i. Respiratory
ii. OSHA Lead Standard
iii. EPA

2. Health hazards
a. Routes of entry
i. Inhalation
ii. Ingestion

b. Effects
i. Kidney damage
ii. Cardiovascular
iii. Blood
iv. Bone
v. Reproduction

c. Body storage of lead
i. Body burden
ii. Bones
iii. Chronic exposure

1. Anemia
2. Reproductive
3. Kidney
4. Respiratory

iv. Acute
1. Joint pain
2. Fatigue
3. Muscle cramping

d. Lead excretion
i. Kidneys
ii. Time
iii. Damage
1. Blood cells
2. Brittle bones
3. Organ failure

3. Safety controls
a. Federal statutes
i. EPA
ii. National Pollutant Discharge Elimination System
iii. Toxic Substance Control Act
iv. Clean Water Act
b. Collection sites
i. Ambient air
ii. Soil
iii. Water
c. Waste documentation
i. Chain of custody
ii. Manifest
iii. Competent person over site

1. Waste transport
a. Labeling
b. Manifest
c. Approved destination facility
d. Requirements
i. EPA
ii. Department of Transportation
iii. State and local regulations

2. Stabilization and recycling
a. Additives
b. Offsite
c. Approved facilities

1. Abatement projects
a. Controls
i. Potential sources
ii. Engineering
iii. Administrative
iv. Worker protection
b. Lead coating disturbance
i. Environmental
ii. Worker exposure
c. Lead identification
i. Paint chip analysis
ii. Historical data
iii. Air monitoring
d. Compliance plans
i. Respiratory program
ii. Environmental
iii. Waste management
e. Monitoring

i. Air
ii. Blood
iii. Jobsite specific
iv. Operational
v. Point source

Religious Accommodation

Before reviewing the course schedule, students should carefully review the following religious accommodation policy and other required instructional policies:

Religious Accommodation:

Students seeking an accommodation for absences permitted under Ohio's Testing Your Faith Act must provide the instructor with written notice of the specific dates for which the student requires an accommodation and must do so not later than fourteen (14) days after the first day of instruction. Please submit requests for accommodations at this link: https://portal2.tri-c.edu/ReligiousAccommodation/ Religious Accommodation Form. Students with questions about their religious accommodations under Ohio's Testing Your Faith Act may contact the College's Office of General Counsel and Legal Services by phone at 216.987.4856 or via email at legal@tri-c.edu.

Other Required Instructional Policies:

https://www.tri-c.edu/student-resources/curriculum/documents/syllabus-part-b.pdf

Weekly Schedule

	Topics
Week 1	Course orientation and overview of lead hazards
Week 2	History and sources of lead exposure
Week 3	Lead in paints, coatings, and materials
Week 4	Toxic metals related to industrial painting
Week 5	Health effects of lead on adults and children
Week 6	Routes of entry: inhalation and ingestion
Week 7	Acute vs. chronic lead exposure
Week 8	OSHA Lead Standard and worker protection
Week 9	EPA regulations and environmental protection
Week 10	Contractor, owner, and consultant responsibilities
Week 11	Legal issues: contracts, torts, and liability
Week 12	Lead identification and jobsite assessment
Week 13	Engineering and administrative controls
Week 14	Waste handling, transport, and documentation
Week 15	Monitoring: air, blood, and exposure controls
Week 16	Review, applied safety practices, and assessment

The Course Schedule is subject to change due to pedagogical needs, instructor discretion, parts of term, and unexpected events.

Required/Recommended Readings

Instructor-provided materials

Resources for the Instructor

The International Union of Painters and Allied Trades Joint Apprenticeship and Training Fund. *Introduction to Spray Painting*. Hanover, MD: The International Union of Painters and Allied Trades, https://www.iupat.org/

The International Union of Painters and Allied Trades Joint Apprenticeship and Training Fund. *Spray Painting Safety Awareness*. Hanover, MD: The International Union of Painters and Allied Trades , https://www.iupat.org/

The International Union of Painters and Allied Trades Joint Apprenticeship and Training Fund. *Conventional Air Spray Systems*. Hanover, MD: The International Union of Painters and Allied Trades , https://iupat.org

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The International Union of Painters and Allied Trades Joint Apprenticeship and Training Fund. *HVLP Turbine Spray Systems*. Hanover, MD: The International Union of Painters and Allied Trades , https://iupat.org

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Sherwin Williams. *Sherwin Williams HVLP Training Manual*. Minneapolis, MN: Sherwin Williams, www.sherwinwilliams.com

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Additional Resources for the Instructor

www.odh.ohio.gov (http://www.odh.ohio.gov/odhprograms/dspc/lp_prev/lp_prev1.aspx)

www.epa.gov (https://catalog.tri-c.eduwww.epa.gov)

Top of page

Key: 658