

ENVIRONMENTAL POLLUTION AND WASTE MANAGEMENT

UNIT CODE: ENV/CU/MGT/CR/03/6/A

Relationship to Occupational Standards

This unit addresses the unit of competency: Manage environmental pollution and waste

Duration of Unit: 100 hours

Unit Description

This unit describes the competencies required to manage environmental pollution and waste. It involves controlling air, water, soil and noise pollution. It also entails managing wastewater, solid waste, hazardous waste and e-waste and sensitizing the community.

Summary of Learning Outcomes

1. Control air pollution
2. Control water pollution
3. Control soil pollution
4. Control noise pollution
5. Manage wastewater
6. Manage solid waste
7. Manage hazardous waste
8. Manage e-waste
9. Sensitize community

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Control air pollution	<ul style="list-style-type: none">• Meaning of pollution• Effects of pollution to the environment• Types of pollution• Types of air pollutants• Sources of air pollution• Dispersion of pollutants• Gaseous air pollutants	<ul style="list-style-type: none">• Observation• Oral questioning• Written tests• Projects• Practical

	<ul style="list-style-type: none"> • Inorganic air pollutants • Analysis of air samples • Smog forming emissions • Effects of air pollution to the environment • Air pollution trends <ul style="list-style-type: none"> • Ozone depletion • Acid rain 	
2. Control water pollution	<ul style="list-style-type: none"> • Nature and type of water pollution • Types of water pollutants • BOD, COD, acidity, alkalinity, salinity • Harmful effects of pollutants to water • Water pollution control methods • Water pollution trends <ul style="list-style-type: none"> • Water hyacinth • Eutrophication • Siltation 	<ul style="list-style-type: none"> • Observation • Oral questioning • Written tests • practical
3. Control soil pollution	<ul style="list-style-type: none"> • Characteristics of soil • Sources of soil pollution • Soil tests for determination of pollutants • Treatment of polluted soil • Effects of pollutants to the soil • Soil pollution control measures • Environmental regulations (EMCA 1999) 	<ul style="list-style-type: none"> • Observation • Oral questioning • Written tests • Practical
4. Control noise pollution	<ul style="list-style-type: none"> • Sources of noise pollution • Noise meters • Determination of noise pollution level • Noise pollution control measures • Environmental regulations (EMCA 1999) 	<ul style="list-style-type: none"> • Observation • Oral questioning • Written tests • Projects • Practical

5. Manage wastewater	<ul style="list-style-type: none"> • Meaning and importance of waste management • Types of waste • Sources of wastewater • Types of wastewater • Wastewater treatment process • Recovery of wastes 	<ul style="list-style-type: none"> • Observation • Oral questioning • Written tests • Projects • Practical
6. Manage solid waste	<ul style="list-style-type: none"> • Types of solid waste • Quantities and characteristics of solid waste • Solid waste collection • Solid waste disposal • Methods of solid waste volume reduction • The 7Rs principle <ul style="list-style-type: none"> • Reuse • Recycle • Reduce • Repair • Rethink • Refill • Refuse 	<ul style="list-style-type: none"> • Observation • Oral questioning • Written tests • Projects • Practical
7. Manage hazardous waste	<ul style="list-style-type: none"> • Meaning of hazardous wastes • Type of hazardous wastes • Impacts of hazardous waste to the environment • Hazardous waste processing and handling • Transportation of hazardous waste • Resource recovery alternatives • Hazardous waste management facilities 	<ul style="list-style-type: none"> • Observation • Oral questioning • Written tests • Projects • Practical
8. Manage e-waste	<ul style="list-style-type: none"> • Types of electronic wastes • E-waste management process • The 7Rs principles • Waste management regulations, WEEE (waste, electrical and 	<ul style="list-style-type: none"> • Observation • Oral questioning • Written tests • Projects • Practical

	electronic equipment) directives and guidelines	
9. Sensitize community	<ul style="list-style-type: none"> • Importance of community sensitization • Community mobilization and sensitization procedures • Waste management policies. (EMCA, 1999 and amended EMCA 2015) 	<ul style="list-style-type: none"> • Observation • Oral questioning • Written tests • Projects

Suggested Methods of Instruction

- Lectures
- Group discussions
- Demonstration by trainer
- Exercises by trainee

Recommended Resources

- Monitoring Equipment
- Laboratory
- Data
- Computer
- Stationery
- Internet

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