

**Waste Disposal Guidelines 2082**  
**Central Department of General Science**  
**Far Western University, Mahendranagar, Kanchanpur**

### 1. Introduction

These Waste Disposal Guidelines are prepared in compliance with the **Solid Waste Management Act, 2068 (2011)**, and the **Environment Protection Act, 2076 (2019)** of Nepal. The purpose is to ensure safe, environmentally sound, and legally compliant management of all waste generated within the Central Department of General Science at Far Western University.

The guideline integrates national standards for:

- Hazardous and non-hazardous waste management
- Health-care risk waste management
- Environmental protection and pollution control
- Sustainable organic waste treatment (composting and vermicomposting)

### 2. Categories of Waste (as per Nepal Government Classification)

Waste generated within the department shall be classified as:

#### 1. General Waste

Non-hazardous waste such as paper, plastics, packaging materials, and food wrappers.

#### 2. Chemical Waste

Laboratory chemicals, including solvents, acids, reagents, and heavy metals generated from Chemistry, Biology and Environmental laboratories.

#### 3. Infectious / Biological Waste

Cultures, contaminated materials, microbiological waste, and biomedical waste from Microbiology and Zoology laboratory.

#### 4. Sharps Waste

Needles, blades, glassware, and sharp laboratory materials.

#### 5. Electronic Waste (E-waste)

Discarded electrical and electronic devices.

#### 6. Biodegradable (Organic) Waste

Food scraps, plant materials, and compostable organic matter.

### 3. Waste Segregation:

Source segregation will be prioritized

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- **General Waste:** Sort out the recyclable and non-recyclable materials. Paper, cardboard and plastic should be placed in the separate bins (Doko labelled with general waste)
- **Chemical waste:** Should go in the chemical waste bins, properly labelled with the name of the substance, concentration, and potential hazards.
- **Biological waste:** These should be collected in biohazard bags or containers marked with the biohazard sign. Before the disposal of any biological waste or cultures, everything must be autoclaved.
- **E-Waste:** Have a separate e-waste container for storing purposes, considering that it will be recycled in the future for reuse.
- **Biodegradable Waste:** Should be collected and capped in separate bins (Doko).

#### 4. Safe Handling Procedures

All staff and students must follow Occupational Health and Safety standards:

##### Chemical Waste

- Use PPE (gloves, goggles, lab coat)
- Label all containers with hazard classification
- Follow Material Safety Data Sheets (MSDS)

##### Biological Waste

- Mandatory autoclaving before disposal
- Use biohazard bags with the biohazard symbol
- Handle using biosafety protocols

##### Sharps

- Dispose immediately in puncture-proof containers
- Do not recap needles

##### E-Waste

- Store in designated secure storage
- Dispose through authorized recyclers

##### Biodegradable Waste

- Handle separately for composting or vermicomposting

#### 5. Autoclaving Standard (As per Health Care Waste Guideline Nepal)

Biological waste shall be sterilized under the following conditions:

- **Temperature:** 121°C
- **Pressure:** 15 psi
- **Time:** Minimum 20 minutes

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## 6. Final Disposal Procedures

Waste Type	Disposal Method
General Waste	Municipal collection system
Chemical Waste	Licensed hazardous waste handler
Biological Waste	Autoclaved then disposed as municipal waste
Sharps	Encapsulation/incineration via authorized service
E-Waste	Certified recycler
Organic Waste	Composting or vermicomposting

## 7. Composting System (Organic Waste Management)

The department shall implement composting aligned with Nepal's environmental sustainability policy:

### Allowed Materials

- Fruit/vegetable waste
- Yard waste
- Eggshells, tea leaves, coffee grounds
- Non-chemically treated paper

### Prohibited Materials

- Meat, dairy, oils
- Plastics or synthetic materials
- Diseased plants

## 8. Vermicomposting Program

A small-scale vermiculture system shall be established for sustainable waste conversion.

### Implementation

- Dedicated vermicomposting unit
- Managed by a trained composting committee
- Use of earthworms (*Eisenia fetida* recommended)

## 9. Training and Awareness

As per Government environmental compliance requirements:

- Annual training on waste handling and biosafety
- Mandatory induction for new students and staff
- Awareness campaigns on waste segregation and sustainability

## 10. Emergency Response Plan

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### Chemical Spill

- Use spill kits
- Inform the lab supervisor
- Follow MSDS emergency protocol

### Biological Spill

- Isolate area
- Disinfect with an appropriate solution
- Use PPE

### Sharps Injury

- Immediate washing
- Medical consultation
- Incident reporting

## 11. Monitoring, Inspection, and Compliance

To ensure compliance with national environmental law:

- Quarterly waste audits
- Monthly inspection of storage and composting areas
- Annual environmental compliance review

Records must be maintained for inspection by regulatory authorities.

## 12. Environmental and Legal Compliance Impact

These guidelines contribute to:

- Reduction in environmental pollution
- Compliance with national environmental laws
- Safe laboratory practices
- Sustainable campus waste management
- Contribution to Nepal's national SDG commitments

## 13. Conclusion

The implementation of the Waste Disposal Guidelines ensures that the Central Department of General Science operates in full compliance with the legal and environmental framework of Nepal. Proper waste management safeguards public health, preserves environmental quality, and promotes sustainable academic practices in line with national and global environmental goals.

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