

Section 3: Laboratory and Hazardous Waste

The campus environment generates not only domestic waste but also laboratory, technical, and administrative waste that requires special collection and disposal procedures. This section provides clear, step-by-step guidelines for managing these special categories—also referred to as toxic or hazardous waste—to ensure both legal compliance and operational safety.

This information is specifically prepared for laboratory personnel, technical staff, and administrative units.

By distinguishing user pathways for different roles, this structure enhances both the usability of the website and compliance with occupational health and safety standards.

1. General Approach and Responsibilities

IZTECH's guiding principle for hazardous (toxic) waste management is:

“The unit that generates the waste is responsible for its management.”

Each laboratory or workshop is responsible for properly segregating, labeling, temporarily storing, and reporting the waste generated from its activities to the authorized unit.

- Each unit must appoint at least one “Waste Officer.” This person works in coordination with the Sustainability Office and the Occupational Health and Safety (OHS) Unit.
- All procedures are carried out in accordance with the Zero Waste Regulation, the Waste Management Regulation, the Regulation on the Labeling of Hazardous Substances and Mixtures, and the Regulation on the Control of Medical Waste.
- Waste declaration and transportation must be conducted exclusively through MoTAT (National Waste Tracking System)

2. Standard Workflow for Laboratories

Step 1 – Waste Identification

Each waste type must be classified immediately upon generation according to its content:

- Chemical waste (acids, bases, solvents, paints, reagents, etc.)
- Biological waste (microbial cultures, contaminated materials)
- Clinical waste (gloves, scalpels, or needles contaminated with blood)
- Packaged laboratory waste (empty solvent bottles, glass reagent containers)

Step 2 – Labeling

Each waste container must have a label including the following information:

- Waste name and type
- Producing laboratory / unit name
- Date of generation
- Name and signature of the responsible person

- “Hazardous Waste” marking (with pictogram if applicable)

Standard label templates provided by the IZTECH Sustainability Office will be available for download on the website.

The label template to be used is presented below..

Atığın adı ve türü (Type and definition of the waste): _____

Üreten laboratuvar / birim adı (Laboratory and/or unit): _____

Oluşturulma tarihi (Date): _____

Üretici kişi ve imza (Responsible signature): _____



Figure: Hazardous Waste Label

Step 3 – Temporary Storage

- Waste must be collected in **sealed, durable, and leak-proof containers** within the laboratory.
- **Incompatible chemicals** (e.g., acids-bases, oxidizers-organic solvents) must **not** be stored together.
- **Biological and clinical wastes** must be kept in sealed **red biohazard bags or containers**.
- The **maximum storage duration** within laboratories is **six months**.

Step 4 – Transfer Notification and Delivery

- Before delivering accumulated waste to the **chemical waste storage facilities** marked on the campus waste map, the **Laboratory Supervisor** must fill out a “**Waste Delivery Form**.”
- After delivery, the waste is **weighed by authorized technical personnel**, and a **delivery receipt** is signed.
- The waste is then collected by a **licensed company** via the **MoTAT (National Waste Tracking System)** according to its classification.

1. Chemical Waste Storage Facilities

All hazardous waste generated by laboratories and technical units across the IZTECH campus is temporarily stored in **chemical waste storage areas**.

Storage Facility Features:

- Ventilated and fire-resistant structure
- Chemically resistant flooring and leak-proof containment basin
- Separate storage of all wastes in **color-coded containers**
- Labeled and systematically recorded inventory
- Security system preventing unauthorized access

The storage facility operates under the coordination of the **Occupational Health and Safety (OHS) Unit**.

Wastes are collected **periodically by licensed companies** and transported to **authorized disposal facilities**

2. Training and Inspection

- Laboratory personnel receive **annual training** on “Hazardous Waste Management and Safe Storage.”
- An **orientation module** is provided for newly assigned researchers.
- The **Sustainability Office** conducts **biannual inspections** of laboratory waste areas and reports any non-compliances

3. IZTECH's Recommended Best Practice Approach

1. Central Waste Management Portal:

A **dedicated portal** will be available under the “**Laboratories and Technical Staff**” section of the website, where users can:

- Fill out the **Waste Delivery Form** online

Atığın adı ve türü (Type and definition of the waste): _____

Üreten laboratuvar / birim adı (Laboratory and/or unit): _____

Oluşturulma tarihi (Date): _____

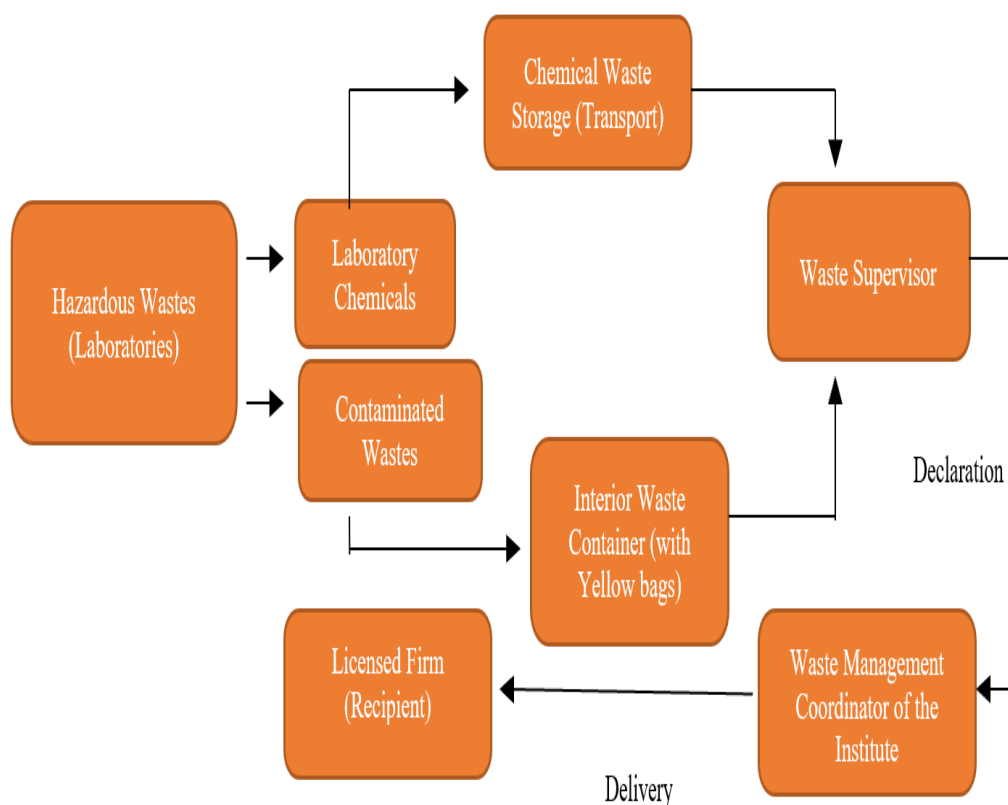
Üretici kişi ve imza (Responsible signature): _____

Miktar (Amount): _____



Label Templates (available for download in **PDF/Word** format)
(As presented above.)

Hazardous Waste Procedure Document (step-by-step operational guideline)



- **Training Videos and Presentations** (available in short-format versions)

2. Digital Tracking System (Planned for 2025):

The amount, type, and delivery date of waste generated by each laboratory will be digitally recorded and automatically integrated into the **annual sustainability reporting system**.

3. Emergency Communication

In case of **chemical spills, odor incidents, or accidental exposure**, the **central emergency line (112)** must be contacted immediately.

Sustainability Perspective

IZTECH aims not only to ensure the safe disposal of laboratory waste but also to **evaluate its potential for reuse and recovery**.

- Usable chemicals can be shared with other laboratories through the **“IZTECH Chemical Sharing Network.”**

Glass materials are **cleaned and reused** where appropriate.

- The installation of a **distillation unit for organic solvent recovery** is planned for the near future.

This approach supports the university's vision of a **circular laboratory management system**, aiming to **minimize waste generation at the source** while promoting sustainable resource use across the campus.



Figure: Laboratory Waste Collection Area

3.1. Electronic Waste (WEEE) Management

Any item that plugs in, contains a battery, or can be charged is classified as Waste Electrical and Electronic Equipment (WEEE).

Disposing of these items in regular waste bins is strictly prohibited, as electronic devices may contain toxic components such as mercury, lead, cadmium, and brominated compounds, which pose serious risks to both human health and the environment.

Institutional Equipment (University Property)

For university-owned electronic devices — such as computers, monitors, and printers — a centralized and secure disposal procedure must be followed.

Main Steps of the Procedure:

Old devices may not be sold, donated, or transferred for personal use.

All institutional devices must be delivered only to licensed recycling companies contracted with the university.

Data Security:

All hard drives must be permanently and irreversibly wiped in accordance with data protection standards.

Official Record:

A disposal form must be completed and approved to remove the equipment from the university's fixed asset registry.

This process ensures compliance with legal regulations and guarantees data and environmental security.

Personal Electronic Waste

Students and staff are encouraged to deposit their personal small electronic items — such as batteries, charging cables, earphones, mobile phones, and small household devices — in the designated e-waste collection boxes located across the campus.

These collection boxes are primarily located in the Faculty of Engineering, Block C.

During specific periods of the year, the number of boxes is increased through dedicated e-waste collection campaigns.

Information about these campaigns is provided below.



Figure: Official Photo from the Campus E-Waste Project

During student move-out periods (e.g., at the end of each semester), these collection points are actively promoted through announcements, posters, and email notifications.

IZTECH collaborates with the licensed recycling company EXITCOM for the collection and recycling of e-waste.

As part of this collaboration, pet food is provided for campus animals in exchange for the collected electronic waste, combining environmental responsibility with social benefit.

Clinical and Biological Waste

- These wastes must be placed only in containers specifically designed for this purpose that are leakproof, puncture resistant, and marked with the biohazard symbol such as yellow sealed boxes or bags.

- The management process must comply with the Regulation on the Control of Medical Waste.
- Collected waste is delivered by authorized personnel to licensed disposal facilities.

3.3. Batteries, Accumulators, and Lighting Equipmen

This category of waste contains heavy metals and toxic chemicals and is therefore classified as hazardous waste that must be managed exclusively through special collection systems. Improper disposal can cause severe harm to both the environment and human health.

Portable Batteries (AA, Button Cell, Rechargeable, etc.)

It must be clearly stated that these batteries must never be disposed of in General Waste or Recycling bins.

- Across the campus, Battery Collection Boxes are placed in high-traffic areas such as building entrances, libraries, cafeterias, faculty buildings, and dormitories.



Figure: Waste Battery Collection Box

- These boxes are also marked on the campus map to ensure easy accessibility.
 - Once full, the collected batteries are safely transported by **licensed recovery companies**.
- Rule:** Never mix batteries with other types of waste. The heavy metals they contain (especially mercury, cadmium, and nickel) can leak into the environment and cause **permanent contamination**.

Industrial Batteries and Accumulators (Laptop, Lithium-ion, Lead-acid, etc.)
These large-capacity or industrial batteries **must never be disposed of in portable battery collection boxes**.

- A **centralized collection system** has been established on campus for such waste.
- Staff and students may deliver these batteries directly to **hazardous waste collection areas**.
- Alternatively, an “**Waste Battery Delivery Request**” form can be filled out through the **Electronic Document Management System (EBYS)** to request pickup by the technical unit.

- All collected batteries are securely stored in **temporary storage areas** before being transferred to licensed recycling facilities. Dedicated spaces for such waste also exist within the **hazardous waste storage facilities** and in the **Faculty of Engineering, Block C**.

Lighting Equipment (Fluorescent Lamps, Bulbs, LEDs, etc.)

- Fluorescent lamps, energy-saving bulbs, and LEDs contain **mercury and phosphor compounds** that require special handling.
- Broken or damaged bulbs must be collected in **sealed packaging** and sent to temporary storage labeled as “**Lighting Waste**.”
- All collected lighting equipment is delivered to **licensed hazardous waste disposal firms**.

These practices ensure both **campus safety** and **full compliance with environmental regulations**.

Each collection point must be **regularly maintained**, and the **Sustainability Team** should periodically monitor the **fill levels** of all collection boxes.

3.4. Bulky Waste and Construction or Renovation Waste

During large-scale cleanups, furniture replacements, office relocations, or renovation works on campus, bulky waste such as desks, chairs, shelves, cabinets, carpets, and construction debris must be managed through a special procedure.

Due to their size and composition, these materials cannot be placed in standard waste bins and are handled outside the general waste management system.

Implementation Procedure:

1. Scope: Bulky waste collection services can only be requested by administrative units or faculty secretariats.
2. Request Method: The relevant unit must contact the Department of Construction and Technical Affairs to create a “Bulky Waste Collection Request.”
3. Container Provision: When necessary, a temporary bulky waste container is placed on campus.
4. Segregation:
 - Reusable items such as furniture or equipment are set aside for storage or reuse.
 - Recyclable materials such as metal components are directed to recycling facilities.
 - Non-recyclable construction debris is transported to licensed disposal sites.
5. Cost: The cost of container use and transportation may be covered by the budget of the requesting unit.

This process ensures that the campus remains organized and that all bulky waste is managed safely and without environmental impact



Figure 1: Bulky Waste Container

3.5. Destruction of Confidential Documents

The secure destruction of sensitive and confidential documents produced within the university — including personnel files, financial records, exam papers, and research outputs — is an essential part of the university's data protection policy. This procedure covers both printed materials and digital storage media such as CDs, DVDs, external drives, and USB devices.

Implementation Procedure:

1. Request: To initiate document destruction, the relevant unit must submit a “Confidential Document Destruction Request” through the institutional Electronic Document Management System (EBYS).
2. Collection Boxes:
 - Upon request, units are provided with locked “Confidential Waste Boxes.”
 - These boxes can be opened and transported only by authorized personnel.
3. Destruction Process:
 - Documents are collected periodically by an authorized company or internal unit.
 - Destruction is carried out using shredding or incineration methods.
 - Upon completion, a “Destruction Report” is issued and delivered to the relevant unit.
4. Digital Media:

- CDs, DVDs, and disks are destroyed completely using physical breaking or data-erasure software.

This process is conducted in full compliance with the Personal Data Protection Law (KVKK) and the University Data Security Policy, ensuring both confidentiality and environmental responsibility.