



Safety Guidelines and Considerations on Teaching with Hazardous Materials/Processes in Youth Outreach Programs

Scope

This guideline covers all activities at U of T involving teaching programs for youth (under the age of 18) or general public activities, such as outreach programs for high school students, Take Our Kids to Work Day events, Science Rendezvous, educational and training workshops, camps, etc. where the activities include the use of hazardous materials or hazardous techniques for demonstration or youth participation.

Hazardous materials and techniques include but are not limited to: WHMIS-classified chemicals, biological agents, ionizing or non-ionizing radiation, lasers and UV sources, sharps, noise and vibration hazards, power tools, working at heights, hazardous techniques, equipment, and processes.

Introduction

Outreach to youth and the general public is an important mission of the University of Toronto. It allows researchers and educators to share their knowledge, experience, and new findings with the public and provides a valuable opportunity for hands-on experience in the laboratory environment. It boosts the public's understanding and appreciation of the cutting-edge research and technological advances that the U of T community contributes to, and it allows students to observe and learn laboratory methods and procedures that can prepare them for future studies and research opportunities as they progress through their high school education.

Creating a safe and controlled environment for visitors is critical. Both the space owners (Principal Investigators, Departments/Institutes) and administrators (e.g. an outreach program manager, academic lead) have a responsibility to recognize health and safety hazards and provide required safety information to workers and participants. These guidelines have been prepared by the Office of Environmental Health and Safety to assist organizers, instructors, researchers and laboratory supervisors with making the programs both rewarding and safe.

Legal Requirements

The Ontario Occupational Health and Safety Act sets out the rights and duties of all employees at the University. It establishes procedures for dealing with workplace hazards and ensuring that all lab work sites are in compliance with the law.



Responsibilities

1. The U of T Office of Environmental Health and Safety (EHS):
 - Establishes, updates and modifies guidelines;
 - Assists Divisions, Departments and Principal Investigators in hazard assessments;
 - Recommends measures to reduce risks.
2. Host Department/Faculty, Program Organizer/Unit:
 - Establishes a process of ensuring that all activities involving hazardous agents or processes are approved by a faculty member with experience teaching youth the applicable techniques and/or using the applicable materials;
 - Provides the resources needed for program managers and course instructors to have the activities appropriately reviewed;
 - Arranges for faculty members outside the department to review activities where no faculty member in the department has the required expertise;
 - Ensures that hazardous materials, equipment, tools, techniques, and processes have been subjected to a review that considers the possibility of hazard elimination, substitution, or modification with a goal of minimizing the impact on the education and experience of the program participants;
 - Organizes proper storage of hazardous materials and ensures that the complete inventory is listed on the EHS Central Chemical Inventory ([HECHMET](#), Higher Education Cooperative for Hazardous Material and Equipment Tracking);
 - Arranges for the appropriate facilities, equipment including personal protective equipment (PPE), safeguards, and oversight to complete the activities safely;
 - Arranges for the appropriate [waste management](#) for activities generating hazardous waste or byproducts.
3. Program Managers:
 - Approve the teaching plan after input from the appropriate faculty member(s);
 - Approve teaching materials around safety;
 - Ensure that any changes in the protocol (including but not limited to new materials, new location, and new tools) trigger the review and approval of the protocol;
 - Ensure instructors are familiar with [incident reporting processes](#) any incident reports are submitted within 24 hours of the incident or near miss;
 - Ensure there is a process for parents to be notified of injuries and incidents and have a designated contact for parental queries;
 - Ensure appropriate training is provided to the course instructors, assistants, volunteers, and helpers and that the program keeps the training record for at least one year.
4. Course Instructors:
 - Ensure that all teaching activities covered by these guidelines are examined/approved in the prescribed fashion;



- Seek appropriate knowledge and training on materials, equipment and space provided by the program;
 - Provide relevant expertise to helpers/volunteers/assistants in safely handling materials, tools and equipment during the course-related activities.
5. Facility Operator/Principal Investigators/Permit Holders:
- Ensure that proposed activities involving hazards include methods, techniques, equipment, PPE, containment and training sufficient to deliver a safe program to youth in their facility. All relevant hazardous agents (e.g., biological, chemical, radioactive) must be added to the PI's permit via EHS at least two weeks before the event;
 - Ensure that course instructors and instructor's assistants complete required departmental and EHS training and, when required, are also added to the EHS permit as facility users.
6. Training:
- All outreach participants shall be instructed in the hazards/controls/procedures related to the activity and its required PPE;
 - The youth's parents/legal guardians shall be informed of the hazardous environment in advance;
 - Course instructors who deliver the course material must be appropriately trained and demonstrate skills and proficiency in subject and safety culture.
7. Safety Equipment:
- The activities' appropriate safety equipment and PPE shall be provided according to the program approver's risk assessments;
 - Procedures shall be in place to clean/decontaminate/inspect the PPE that is provided to youth.

For further information or questions related to these guidelines, contact the Office of Environmental Health and Safety at ehs.office@utoronto.ca.