TA/GA Occupational Health and Safety

Faculty of Engineering & Architecture Science (FEAS)
Agenda

- Intro to Health & Safety
- Ryerson EH&S Policy
- Rights & Responsibilities
- Trainings
- Hazards

- Working Safely (Learn to Protect yourself)
  - WHMIS
  - Chemical Safety
  - Bio-safety
  - PPE
  - General lab safety
  - Emergency Procedures
Objective

• To help raise your awareness about health and safety
• Minimize incidents
Why is Health & Safety important?

- Workplaces can be dangerous places

- Injuries happen in all kinds of workplaces

- Every week in Ontario, workers are injured or killed on the job
Why do Workers Get Hurt?

- Lack of adequate training
- Lack of experience
- Unaware of their legal rights
- Eager to impress
- Afraid to ask questions
- Trying to balance several responsibilities
- Distracted
Ryerson’s Environmental Health & Safety Policy
- Definitions

- **Due Diligence**: Taking what care is reasonable in the circumstances to avoid harm

- **Hazard**: A dangerous object, event, behaviour or condition which can interrupt or interfere with the expected orderly progress of an activity

- **Internal Responsibility System**: The philosophical approach to health and safety, which underlies the Ontario OHS Act, whereby responsibility for health and safety is shared by all parties in the workplace

- **Supervisor**: A person who has charge of an area or activity involving a worker, or authority over a worker

- **Worker**: A person who performs work, or supplies services for monetary compensation and includes an employee of Ryerson, and students or other individuals receiving any remuneration

- **Workplace**: Any land, premises, location or thing at, upon, in or near which a worker works
What you need to know when starting a new job

• There are health and safety laws that specify rights and responsibilities for everyone in the workplace.

• The laws also have a provision for setting up a joint health and safety committee or choosing a health and safety representative for your workplace.
Rights

1. Right to know about workplace hazards and what to do about them

2. Right to participate in solving workplace health and safety problems

3. Right to refuse work that is believed to be unsafe
Responsibilities

• working safely to protect yourself & others
• following safe work procedures/practices
• wearing required Personal Protective Equipment
• reporting unsafe conditions
TA/GA – The Supervisor

• A person who is considered by the University to have rights and responsibilities under the University EHS Management System and supporting programs

• Ensure that a worker:
  • works in the manner and with the protective devices, measures and procedures required by law
  • uses or wears the equipment, protective devices or clothing that the worker’s employer requires to be used or worn.
Duties of TAs, techs, profs

• Do everything reasonable to prevent worker injuries
• Educate students on hazards & how to work safely
• Educate students on (& enforce) H&S procedures
• Ensure students wear and use protective equipment
Duties of Students

• Follow the law and safety procedures
• Work safely at all times
• Use required protective equipment
• Report hazards to supervisor
Training
Required Training

- Mandatory for all (on-line):
  - EHS orientation
  - WHMIS

- Hazard-Specific:
  - Radiation
  - Biological
  - Laser
  - X-ray
  - Machine Safety

- Job-Specific: Your PI (supervisor)
• Every workplace has hazards
• There are different types and you need to be aware of the ones in your workplace

• Workplace hazard:
  • Any condition, practise, behaviour, or a combination of these that can cause injury or illness to a person or damage to property
Hazard Recognition

• Goal is to anticipate hazards and then take action before they can cause harm or damage

• You know that feeling you sometimes get in the pit of your stomach when something doesn’t seem quite right? Learn to follow it!

• While some hazards are easy to spot, there are many hidden hazards that fly under the radar
  • faulty equipment or machinery
  • You should report all potential hazards as soon as you sense that something is wrong
Types of Hazards

• Chemical agents
  • Solids, liquids or gases

• Physical agents
  • Forms of energy such as sound, radioactivity or electricity
Types of Hazards

• Biological agents
  • Toxins and microorganisms

• Ergonomic hazards
  • Consequence of poor equipment, workstation design or work activity design
Types of Hazards

- Machinery and equipment related hazards
- Slips & Falls
- Being struck by something
- Confined space hazards
  - Asphyxiation
- Material handling hazards
  - Cuts, punctures, burns, etc.
Hazard Control

- Hazards should be eliminated or at least controlled to minimize exposure to risk
- Here are a variety of ways to control hazards:
  - Substitution with a less hazardous material, process or equipment
  - Re-engineering equipment or a work process
  - Installing physical barriers like machine guarding
  - Personal protective equipment (PPE)
  - Ventilation
Working Safely
Learn How to Protect Yourself

**WHMIS : Workplace Hazardous Materials Information System**

- This system was designed to make sure that workers across Canada know how to safely handle chemicals
- Everyone in the workplace must receive WHMIS training that relates to the workplace
Symbols WHMIS 1988

Symbols WHMIS 2015
• Consists of training, labels and SDS (safety data sheet)
• 2 types of labels:
  • Supplier
  • workplace

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<th>Acetone</th>
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<tbody>
<tr>
<td>Keep away from heat, sparks, and flames.</td>
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<td>Flammable</td>
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<tr>
<td>Store in flammable cabinet</td>
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<td>MSDS available.</td>
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Product K1 / Produit K1

**Danger**

Fatal if swallowed.
Causes skin irritation.

**Precautions:**
Wear protective gloves.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.

Store locked up.
Dispose of container/container in accordance with local regulations.

If ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice or attention.
Take off contaminated clothing and wash it before reuse.
If INHALED: Immediately call a Poison Centre or doctor. 

Company XYZ, 123 rue Machin St, Mytown, ON, N0X 0M0 (123) 455-5690

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Facilities Management & Development

WHMIS
Safety Data Sheets

Role of SDS

- To disclose potential hazards
- To list dangerous ingredients
- To give health & safety risk information
- To explain handling, storage and disposal procedures
- To identify necessary workplace controls
- To describe emergency procedures

- starting point in developing safe handling practices and procedures for a product
- NOT a complete source of health and safety information on its own
- Before using any chemical or chemical product read its SDS
Learn How to Protect Yourself - Chemical Safety

• How a chemical affects us?
  • Depends on toxicity and exposure
  • Toxicity is a property of that chemical substance.
  • The level of exposure depends on the concentration, time and safety equipment

• How can a chemical enter your body?
  • Inhalation
  • Ingestion
  • Skin Absorption (including eyes)
Learn How to Protect Yourself
- Bio-safety

Bio Waste Decontamination:
- Sterilization – Heat treatment (autoclave)
- Disinfection – cleaning with alcohol, hypochloride, iodine, etc.

- Minimize risk of splashes & generation of aerosols
- Use Bio-safety Cabinet if possible
- Allow aerosols to settle for >1 minute prior to opening container

- For more training, contact EHS (Bio-safety Officer)
Hazardous materials are to be used inside the hood.

Perform all work at least 6 inches inside the hood.

Do not put your head inside the hood.

Store hazardous chemicals in the approved safety cabinets (not in the fume hood).

Keep sash closed at all times.

Keep the sash opening to a minimum, leaving enough room for hands and observe experiment through lowered sash.
• Always open the sash slowly;
  - a sudden opening can cause air turbulence and the leaking of contaminants.
• Raise equipment at least 2 inches high on inert blocks to allow for an even airflow.
• Keep laboratory doors closed for proper ventilation efficiency.
• Do not place any spark sources inside the hood when flammable liquids or gases are present.
• Be aware of the toxic properties of the chemicals you are using.
• Read the labels and SDS.
• You are responsible for properly wearing any special protective equipment that your job requires
• Using it will help protect you from injury and illness
• Be sure it fits right and meets approved standards
Personal protective equipment

- Lab coat
  - Protects against chemical and biological agents
- Safety glasses or goggles
  - Prescription glasses must have side shields
- Shoes
  - Must have closed toes
  - No sandals, high-heeled or open-style shoe
- Disposable gloves
  - Do not reuse; remove before exiting lab
Other Personal Protective Equipment

- Special gloves (supplied by department) for use with
  - Concentrated acids
  - Furnaces (temperatures over 500°C)
  - Cryogenics (liquid nitrogen, dry ice)
- Blast shields
- Respirators
- Ear plugs
- Safety shoes
- Fume hoods & biosafety cabinets
Personal Protective Equipment

If you need to use it, make sure you:

• Know how to wear it properly
  • Some types of PPE require fit-testing

• Know how to take care of it properly
  • Improperly stored and/or maintained PPE can get damaged and cease to function and no longer protects user
General Lab Safety

- Follow rules, safe operating or handling procedures
- Get training
- Do not work alone
- Pipetting by mouth is strictly prohibited
- Tie back long hair & avoid loose clothing
- Wear the required lab coat & safety goggles
- No sandals, high-heeled or open-style shoe
- Do not leave equipment unattended
- Always slowly pour acids into water (not the reverse)

- Be familiar with emergency equipment
  - eyewash, gas valves, electrical, fire extinguisher, spill kit, safety showers
- Do NOT dispose hazardous wastes into lab sink or regular garbage
- Do not mix incompatible chemicals
- Report hazards and know what to do in an emergency
- No food or drink in the lab; Not even water
- Remove gloves before exiting lab
Learn How to Protect Yourself
- Emergency Procedures

• Every workplace should have emergency procedures and plans
• Get to know the emergency procedures at your workplace
Learn How to Protect Yourself

• Reporting an Injury
  • If you do get injured or feel ill, advise your supervisor
  • If you receive first aid, it should be recorded

• Reporting a Hazard
  • Don’t assume that someone else has already reported it
  • Protect yourself and anyone who might also be at risk of injury

• First Aid
  • Regulation 1101 provides first aid requirements for different workplaces covered by the *Workplace Safety and Insurance Act*
Reporting Emergencies

- On campus, **do not dial 911**
- Call Ryerson Security at
  - 80 on campus phone (classroom, office)
  - 416-979-5040 on cell (put it in your speed dial)
  - Blue call box

80 is **better than 911**

Faster response:
Paramedics on site
Ryerson Security contacts Emergency Services and guides them to destination
In Case of Fire

- Know your nearest fire exit
- R – Remove occupants
- E – Enclose area
- A – Activate fire alarm
- C – Call security (80 or 416-979-5040)
- T – Try to put out the fire with fire extinguishers
  - Only use them if you have been trained
  - otherwise simply close door and let Security/Toronto Fire take care of it
• Supervisor responsibilities
  • Stop activity (class, meeting, etc.)
  • Advise occupants to leave by the nearest exit
  • Request assistance from occupants to aid people with limited mobility
  • Close the doors to the vacated room
  • Follow the group out and request (if necessary) that they not block exit
Medical emergency

• Call 80 or 416-979-5040 and report incident
• Stay on the line until responders arrive

• Most academic departments have first aiders
  • Send someone to nearest department to find one
  • Be specific: “You (point), go to the department of Physics on the third floor of East Kerr Hall, ask them for a first aider and guide them back here.”
Know where the nearest emergency equipment are:

- Chemical “deluge” safety shower
  - Removes chemical spills on clothing
  - Helps stop fire on clothing

- Eyewash fountain/station
  - Removes chemical splashes and particles from eyes
Summary

• Report EHS concerns promptly
• Document your concerns and follow up
• Use the proper safeguards, devices and personal protective equipment
• Follow the proper procedures
• Stop the work/process if you think it might be dangerous to you or to someone else
• Know the emergency response procedures
# Technical Officers

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<tr>
<th>Department</th>
<th>Dept. Safety Officer</th>
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<tbody>
<tr>
<td>Aerospace</td>
<td>Jerry Karpynczyk</td>
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<tr>
<td>Architecture</td>
<td>Frank Bowen</td>
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<td>Chemical</td>
<td>Daniel Boothe</td>
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<td>Civil</td>
<td>Daniel Peneff</td>
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<td>Electrical &amp; Computer</td>
<td>Jim Koch</td>
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<tr>
<td>Mechanical &amp; Industrial</td>
<td>Roy Churaman</td>
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EHS Contacts

• Eric Ambroise (Lab Safety Officer, ext. 553483, eric.ambroise@ryerson.ca)
• Amit Rajhans (Manager, Physical Infrastructure Risk)

Access to Online Trainings

Complete both the WHMIS and EHS Safety Awareness e-Learning modules.