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High-Hazard Labs Oversight: Roles, Spaces & Safe Practices

Objectives:

1. Clarify what leaders must ensure in high-hazard labs (HHLs)
2. Contrast these labs with regular classrooms/computer lab spaces.
3. Address indoor vs. outdoor high-hazard labs.
4. Touch on field activities and additional Key H&S considerations
5. Wrap-Up: Summary & Takeaways
6. JHSC Oversight

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What are High-Hazard Labs?

Environments with hazardous chemicals, biological agents, radiation, energy systems, etc.

- Examples: chemistry/biology labs, drilling/blasting labs, research labs, hatchery labs, etc.

Why Special Oversight?

- Increased risk of injury or exposure
- Need for specialized equipment, protocols and safety training

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Responsibilities of High-Hazard Lab Supporting Technicians

The Frontline Safety Experts

Technicians are the daily stewards of HHLs. Their expertise and vigilance directly support a strong, prevention-focused safety culture.

Core Responsibilities:

- SOP Development Support: Drafting and revising SOPs in collaboration with lab leaders.
- Preventative Maintenance: Planning, coordinating and logging service for lab equipment and systems.
- Life Safety Equipment Checks:
  - Perform monthly eyewash station testing
  - Verify emergency showers, fire extinguishers and other systems are functional and have been inspected by FSS.
  - Escalate issues immediately.
- Monthly Safety Inspections:
  - Conduct regular walkthroughs of the lab
  - Identify hazards, deficiencies or unsafe practices
  - Submit findings to leadership
- Daily Risk Awareness:
  - Spot-check lab readiness (cleanliness, PPE, signage, storage)
  - Model and reinforce safe lab behaviors with all space users.

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Why Their Role Matters!

Technicians are key connectors between lab users and institutional safety systems. Their role ensures HHLs stay aligned with institutional standards and that issues are addressed upon discovery.

Technicians act as a **safety net** within high-hazard environments. They catch issues early, often before they escalate into risks. Their day-to-day vigilance ensures that labs operate within safe parameters and that nothing slips through the cracks.

Think of them as the **“foundation under the floor”** of a leader’s due diligence — by supporting compliance, readiness, and prevention.

Their proactive involvement enables lab leaders to meet their obligations with confidence, knowing that essential checks, reporting, and maintenance are consistently upheld.

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Responsibilities of Faculty in HHLs

Critical Role in Lab Planning & Delivery

Faculty are at the heart of HHL operations – they design and lead the learning activities that take place in these spaces. Their role is essential in ensuring safety is embedded in both planning and delivery.

Key Responsibilities:

- Activity Planning with Safety in Mind
  - Identify potential hazards related to lab activities
  - Incorporate safety controls into lesson plans and assignments
  - Ensure leading objectives do not compromise safety requirements
- Communicaiton & Collaboration
  - Maintain regular communication with technicians and lab leaders to ensure all risks are identified and mitigated
  - Discuss new or modified activities before implementation to support proper preparation and review
- Curriculum Changes & Risk Review
  - Share any updates to curriculum or lab activities in advance, so specific risk planning can occur
  - Ensure new methods or tools are assessed for safety impacts
- Compliance & Standards
  - Adhere to all institutional safety protocols and regulatory requirements
  - Reinforce PPE use, safety procedures and responsible lab conduct with students

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Why Their Role Matters!

Faculty are the bridge between academic innovation and operational safety.

When they engage early and communicate effectively, it ensures that labs remain both dynamic learning environments and safe workplaces for all.

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Responsibilities of Lab Leaders

Oversight & Strategic Responsibility

Lab leaders are ultimately accountable for the H&S performance of HHL environments. They ensure that planning, controls and communication systems are in place and functioning across all lab activities.

Key Responsibilities:

- Oversight of People & Systems
  - Provide direct support to technicians and faculty ensuring everyone understands and fulfills their safety responsibilities
  - Facilitate regular check-ins between technicians and faculty to resolve safety planning needs.
  - Ensure roles are clearly defined and collaboration is encouraged.
- Policy Implementation & Compliance
  - Ensure institutional health and safety policies are consistently applied across all lab activities.
  - Confirm that regulatory standards (e.g., WHMIS, CSA, OHSA) are met and documented.

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Responsibilities of Lab Leaders cont'd:

Key Responsibilities:

- Safety Program Ownership
  - Approve and review Standard Operating Procedures (SOPs).
  - Ensure hazard assessments are completed and updated as required.
  - Lead risk mitigation planning for curriculum changes or new activities.
- Verification & Accountability
  - Review and act on inspection results from technicians and the JHSC.
  - Address deficiencies in a timely manner and track resolution.
  - Confirm monthly life safety checks and lab inspections (e.g., eyewash stations) are completed and documented.
- Training & Orientation
  - Ensure all users (staff, faculty, students) receive proper training and orientation before using lab spaces.
  - Maintain training records and access control for restricted spaces.

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Why Their Role Matters!

Lab Leaders hold the system together!

They provide the structure, resources and follow-through that enable HHL's to operate safely – while empowering technicians and faculty to do their part.

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Indoor HHLs: Key Requirements

Infrastructure & Controls

- Proper ventilation (fume hoods, exhaust systems)
- Emergency equipment: eyewash, emergency shower stations, spill kits and fire extinguishers specified to activities occurring within the lab
- Access control: locked doors, restricted access, PPE assessment completed and signage posted to reflect

Operational Protocols

- Chemical/biological inventories with SDS, labeling, and worker training
- Written emergency/spill procedures and worker training
- Waste classification, segregation and removal procedures

Documentation & Inspections

- Logbooks (paper or e-book) for maintenance and equipment checks
- Regular internal audits

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Outdoor HHLs

Common Examples

- Field-based activities: drilling and heavy equipment field sites, sawmill areas, sustainable agriculture fields

Specific Oversight Needs

- Environmental and weather risk assessments
- Onsite emergency kits, clean water, shade, shelter
- Clear and documented communication systems and protocols (e.g radio, check-in systems)
- Permits, site authorizations, signage for hazards

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Regular Classroom & Computer Lab

Lower Risk Profile

- Standard fire and electrical hazards
- No specialized containment, ventilation or PPE needed

Feature	HHLs	Classrooms/Computer Labs
Ventilation	Specialized systems	General HVAC
PPE	Mandatory (lab-specific)	Usually not required
Chemical/Bio-Hazards	Present & regulated	Not typical
Waste Disposal	Hazard-specific	Standard trash/recycling

Field Activities & Trips – H&S Lens

Pre-Trip Preparations/Planning
- Location risk assessment (terrain, wildlife, weather)
- Emergency response plan tailored to remote settings
- Required permits and regulatory clearance

During Trip
- Field presentations and hazard briefings
- Reliable communications (phones, radios, etc.)
- First aid and safety gear on site
- Participant check-in/out system

Post-Trip Follow-up
- Record and report incidents
- Trip debrief and update procedures as required

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Summary & Takeaways

1. Leaders must ensure SOPs, visible lab info, job and hazard specific training, inspections, waste management and proper equipment for HHLs.
2. Strong distinction between lab types: HHLs demand tailored engineering, administrative and PPE controls.
3. Outdoor labs/fieldwork require additional environmental, communication and emergency planning.
4. Classroom/computer labs follow standard H&S practices – not HHL lab level hazard control.
5. Robust incident and continuous improvement systems are non-negotiable across all spaces.

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JHSC Oversight of HHLs

Quarterly Inspections in HHLs

The JHSC conducts formal inspections of HHLs every quarter, in alignment with regulatory and internal safety expectations.

Recent JHSC Goal

The committee has set a targeted goal to enhance oversight and engagement in these spaces. Their inspections will focus specifically on:

- Speaking direction with lab technicians to understand current practices, concerns and supports needed
- Verifying SIBs for compliance, completeness and visibility
- Identifying deficiencies related to physical safety documentation or general lab readiness

Why This Matters

The JHSC plays a key role in validating that safety system are active and effective, and that HHL environments are being consistently maintained with a focus on prevention. Their findings and follow-up helps strengthen both leadership accountability and front-line support.

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Thank You!

Questions?

Please email safety@flemingcollege.ca

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