Overview of Safety Practices in ECE
Graduate Student Orientation Seminar

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Safety in ECE – a priority at all levels

Safety of all students and staff is a high priority in ECE, in Engineering, and across campus at the U of A

- The ECE department is currently placing great emphasis on improving the awareness and implementation of good safety practices in all of its research labs
- Faculty supervisors have ultimate responsibility for ensuring that safe practices and proper training are provided in their research labs, however:
- Everyone is responsible for workplace health and safety
- As graduate students, you are on the ‘front line’: for maintaining and improving our department safety culture, it is critical that you are given the resources to practice and recognize good safety protocols in your particular workspaces
Everyone is responsible for workplace health and safety
Case Study
Nitric Acid Explosion
Case studies – Nitric Acid Explosion

On January 24, 2018, there was a detonation in a small contained vessel being heated in a laboratory oven. The detonation caused the vessel to fail at a threaded joint. The two pieces of the vessel rapidly accelerated in opposite directions, tearing through the oven wall, destroying the laboratory oven.
Case studies – Nitric Acid Explosion

One of the pieces narrowly missed a lab occupant and the other piece ricochets within the lab. There were no injuries as a result of this incident. However if the projectiles took a slightly different course, this could have been a very tragic event.
The technical analysis concluded that laboratory personnel intended to clean the vessel by pouring nitric acid and water into a Polytetrafluorethylene (PTFE) liner, placing the liner in the vessel, sealing the vessel and heating the assembly to 110oC in a laboratory oven.

The investigation determined there was chemical contamination that caused a rapid chemical reaction and detonation.
Everyone is responsible for workplace health and safety
Safety – what you should know

As a new graduate student, feel empowered to advocate for good safety practices in your workspaces

• Ensure that you are made aware of the safety training you must have before conducting research in your specific laboratory / work space
• Ask if there is a dedicated “Safety Lead” in your laboratory
• Look for opportunities to be a leader in improving/maintaining good safety practices in your lab (consider taking EHS-offered courses beyond those minimally required for your lab)
• Ask if anyone in your lab has completed the “Supervisory EHS Professional Development” course (https://www.ualberta.ca/environment-health-safety/training/supervisory-ehs-professional-development-2018-2019): ECE is aiming to have at least one person from each laboratory complete this course
• Know that you will be supported if you have concerns about safety!!
Everyone is responsible for workplace health and safety
HEALTH + SUPPORT

Follow these steps to keep yourself healthy and minimize the spread of any respiratory virus (including COVID-19).

1. Prevent
   - Regularly complete the COVID-19 Alberta Health Daily Checklist
   - Follow all campus safety guidelines
   - Practice good hygiene and stay home if you’re sick

2. Stay informed
   - U of A COVID-19 Updates
   - Government of Alberta COVID-19 Information Site
   - Alberta Health Services (AHS)
   - AHS COVID-19 Vaccine Information
   - Public Health Agency of Canada
   - World Health Organization

3. Know your supports
   **Students**
   - On-campus health and wellness resources
   - Off-campus resources
Safety – COVID 19

https://www.ualberta.ca/covid-19/index.html

If you are coming to campus:
Before you come, you must:
• Complete the Mandatory Online Safety Course
• Complete the vaccination declaration / start weekly testing

The following are required for while you are on campus:
• don't come to campus if you are sick
• check-in every visit: https://here.ualberta.ca/
• wear a mask
• keep your distance
• wash your hands
The Beginning of Anything

EngineeringAtAlberta.ca

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