



TEXAS TECH UNIVERSITY™



CHE New Graduate Students Orientation – Safety Talk

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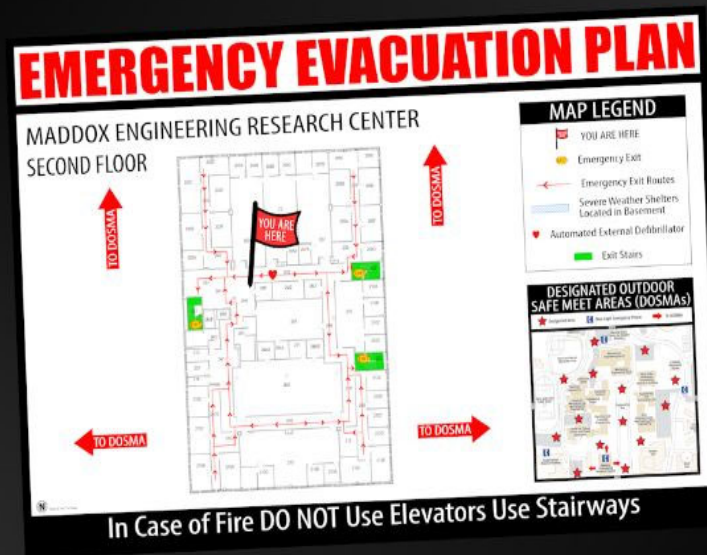
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General Safety Information



Know What To Do In Emergency Events

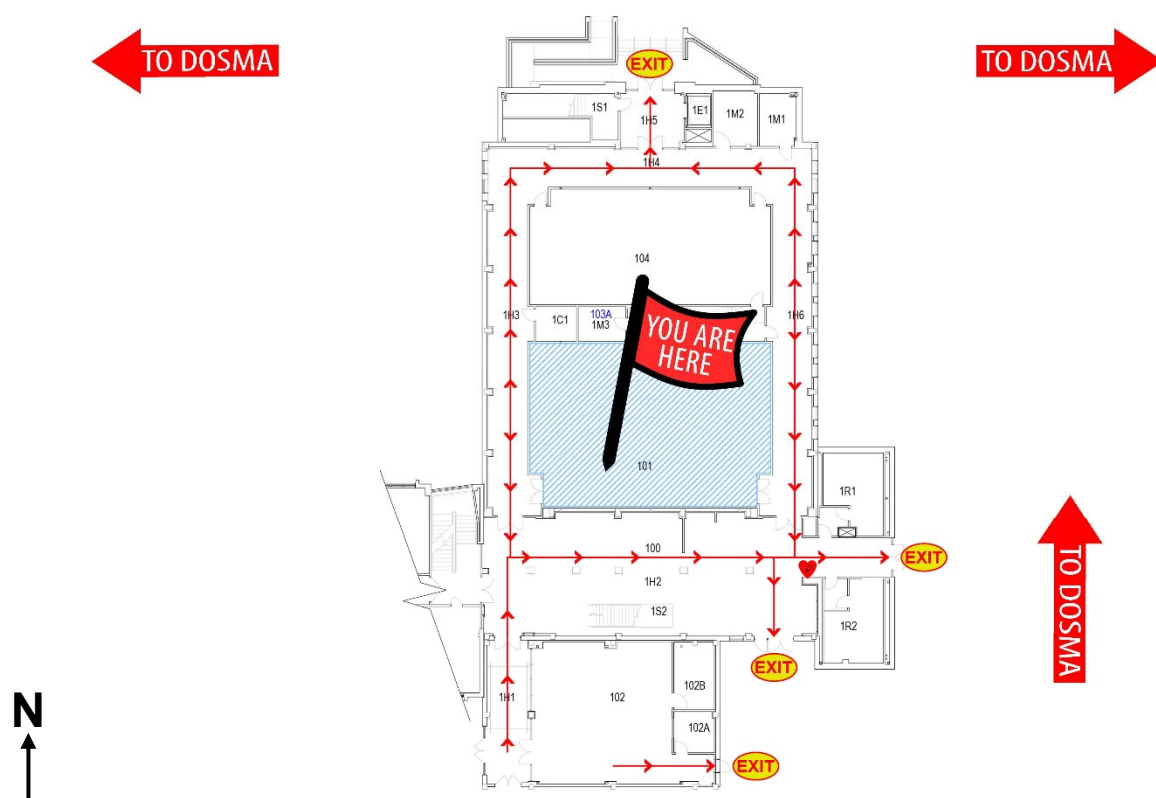




Emergency Response Protocol

EMERGENCY EVACUATION PLAN

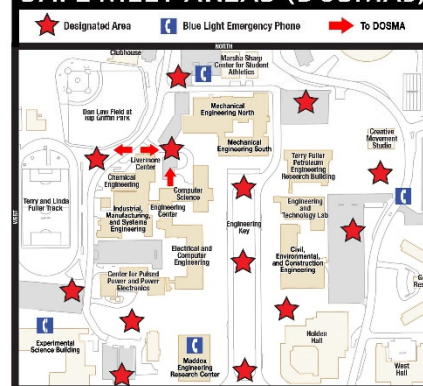
LIVERMORE CENTER - FIRST FLOOR



MAP LEGEND

- YOU ARE HERE
- Emergency Exit
- Emergency Exit Routes
- Emergency Shelter Areas
- Automated External Defibrillator
- Exit Stairs

DESIGNATED OUTDOOR SAFE MEET AREAS (DOSMAs)



In Case of Fire DO NOT Use Elevators Use Stairways

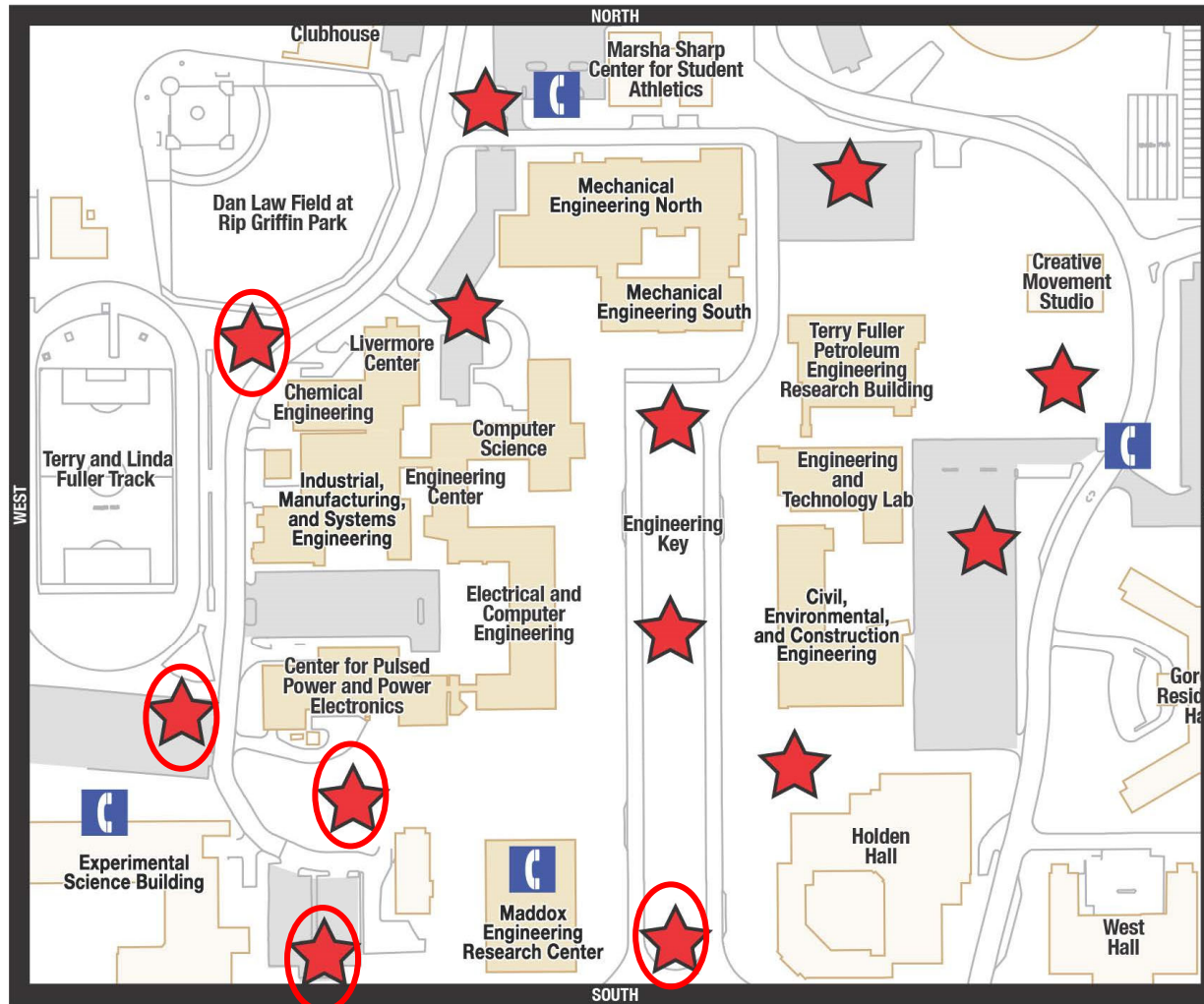
DOSMAs and Tornado Shelter



Designated Area



Blue Light Emergency Phone



Tornado Shelter Area:

Primary:
basement

Secondary: first
floor interior
hallway

Embrace Safety

SAFETY FIRST
WORK AND
STUDY SAFELY

Why?

- Your own safety.
- Your future employer looks for candidate with safe mindset.

Responsibilities:

- Understand that following procedure and performing safe practice is a **JOB REQUIREMENT**.
- Engineer's obligation.

CHE graduate student handbook:

VII. Ph.D. Proposal Exam

The report should also include an appendix (not counted in the 10-15 page limit) on safety assessment. The safety assessment should include a risk assessment of the project, selection of proper PPE, engineering control (e.g. fume hood, biosafety hood etc.), spill response procedure, waste disposal procedure, special safety signs and protocols.



Engineer's Obligation – Safety



Iron Ring: worn by many Canadian/American-trained engineers, symbol and reminder of the obligations and ethics associated with engineering profession.



General Safety Rules



- Always wear appropriate personal protective equipment (PPE) before entering the working area. Use additional protection equipment while required with specific equipment.
- Complete training required prior to the start of the work.
- All injuries, accidents, near misses, and chemical spills must be reported to the supervisor(s) and the departmental safety officer(s) immediately.
- No food, drink, gum, candy, tobacco, cosmetics, and medications are allowed in the laboratories.
- Keep personal belongings (e.g. backpacks) outside of lab space.
- Good housekeeping must be practiced in the laboratories.
- Never allow loose or dangling hair, clothing or jewelry.
- Never wear open-toed shoes and shorts in labs. No skin is exposed from waist down.
- Use buddy-system all the time including after-hours.
- Shorts, skirts, sandals, open-toed, shoes with holes, cloth/canvas uppers are NOT permissible. **Must be liquid repellent.**



Personal Protective Equipment (PPE)

- Personal Protective Equipment (PPE): Lab Coat, Safety Eye Protection, Gloves etc.
- Additional PPE may be required by specific research project or instrument.
- Consult SDSs (safety data sheets), Standard Operating Procedures (SOPs), lab mates, PI.



Safety Glasses or Goggles

Gloves

(Long Hair Tied Back)

Lab Coat

Long Pants

Closed Toed Shoes

...and a SMILE!!!!!!!!!!!!

Appropriate Attire



Michele Dufault
2011 Yale

- Confine long hair. No loose/dangling clothing or jewelry.
- Scarves, dangling necklaces, bracelets or earrings, unbuttoned sleeves or dangling belts are not to be worn.

Video of Lab Behavior



BEHAVIOR



<https://www.youtube.com/watch?v=e7VkluiT1kU>

Safety Training Requirement



Type of Training	Frequency
Safety Awareness (HR cornerstone)	Biennial
Laboratory safety Training	Biennial

Additional trainings may be required, such as Biological Safety, Blood borne Pathogen, Laser Safety, Radiation Safety etc. Please discuss with your supervisor about what safety training are required for your job duty.

Departmental safety seminar, 9/10/2021

Emergency Contacts – Safety CarryCard



Enroll in Tech Alert

TTU Police Department (TTPD)

Medical/Fire/Police/Bomb Threat Emergency 911

Non-Emergency 806.742.3931

TTU Environmental Health and Safety

Daytime Emergencies (M-F, 8:00am - 5:00pm) 806.742.3876

Other times 806.742.3328

Physical Plant Emergency Maintenance

806.742.3328

SafeRide (10pm – 2:45 am) Thursday, Friday, and Saturday

806.742.RIDE (7433), TTU student ID

Safety Resources



- TTU Environment Health & Safety (EHS) website

<http://www.depts.ttu.edu/ehs/Web/>

- WCOE Safety website

<http://www.depts.ttu.edu/coe/safety/>

- Safety Training Website: <https://appserv.itts.ttu.edu/VividShim/>
- TTU Lab Safety Manual (April 2020 version)
- Safety Plan on each department's website
- Lab Safety Plan, Standard Operating Procedure (SOPs), Safety Data Sheet (SDS)
- Safety Carry Card/ Safety Brochure

WCOE Monthly Safety News Flash



your browser

Whitacre College of Engineering **SAFETY** News Flash

Safety Video

Liquid nitrogen is often used in research activities which has various applications. However, be aware that there are significant hazards associated with using, storing and transferring liquid nitrogen. The [video](#) discusses the health and safety hazards of liquid nitrogen and the best practices to work with it.

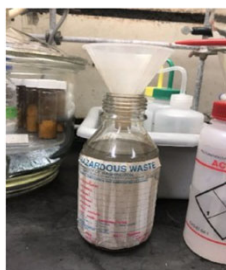


The following topics are covered by the [video](#):

- The hazards associated with liquid nitrogen
- Parts of a liquid nitrogen tank including the safety features
- Safety dispensing liquid nitrogen and handling cryogenic tubes
- Filling a liquid nitrogen tank at a dispensing facility and what to do in an emergency
- Safely transporting liquid nitrogen within a building
- Other cryogenic liquids requiring additional safety considerations

Lesson Learned

[Chemical Waste Container Explosion \(University of Washington\)](#)



A waste bottle ruptured, spilled about 3 liters of hazardous liquid, and spread broken glass pieces. The waste label attached to the bottle was incomplete, so the actual contents were unknown. The waste bottle was overfilled with inadequate headspace which may lead to over-pressurization.

Some guidelines for handling chemical waste are as follows:

1. Chemical waste must be disposed of when it reaches $\frac{3}{4}$ full to avoid over-pressurization.
2. Never mix incompatible chemicals in a waste bottle.
3. Complete the information required on the waste label. Each chemical added to the container must be written with its full chemical name instead of abbreviation or formula.
4. Waste container stored on the floor shall be placed in secondary containment to collect spills.
5. Waste containers must be closed when waste is not actively being added or removed from the container.
6. Contact EHS for disposal and handling instructions of high hazard waste (e.g. dried picric acid, explosives, energetic materials, toxic gases, etc.)

Do You Know?



Photo credit: Google images

If glassware is accidentally dropped on the lab floor, do you know how to handle the glass waste?

The following are guidelines and TTU safety rules regarding the broken glass:

- Glass waste must be segregated from other solid municipal waste and disposed of in a **sturdy, puncture-resistant, closable** box **labeled as broken glass**. Add a plastic bag liner inside the box to prevent small glass pieces from escaping.
- Glass must be **decontaminated** (e.g. triple rinse, disinfection,



Comments/Questions